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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

COMPLETED
ORIGINAL

There Is No Shortage Of Freight Cars--Railroads Must Make Better Use Of What They Have

Railroads cannot satisfy the demand for freight cars because they do not use the existing car fleet efficiently. Enough cars are available, but they are not in the right place at the right time. Federal agencies can do little to substantially improve utilization.

Federally financed research does point the way to improve car utilization techniques, but only railroad managers can make the operating improvements which will largely eliminate the illusive freight car shortage. To supplement improved utilization, railroads could use greater pricing freedom to defer peak demand for cars. The recently approved rail deregulation act permits greater pricing freedom but it is too early to evaluate this legislation's effects.

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-195212

To the President of the Senate and the
Speaker of the House of Representatives

The inability of shippers, especially grain shippers, to obtain an adequate supply of freight cars when needed--commonly reported as freight car shortages--has been a matter of national concern for decades. At the request of Congressman Dan Glickman, House Committee on Agriculture, and because of the increased attention this situation has received from the Congress, the media, and the Federal agencies concerned with rail transportation, we reviewed the problem to determine its extent, the efforts of Federal agencies to resolve it, and to suggest possible solutions.

We are sending copies of the report to the Director, Office of Management and Budget; the Chairman, Interstate Commerce Commission; the Secretaries of Transportation and Agriculture; the President, Association of American Railroads; and other interested parties.

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

THERE IS NO SHORTAGE OF FREIGHT CARS--RAILROADS MUST MAKE BETTER USE OF WHAT THEY HAVE

D I G E S T

Shippers complain that they cannot get freight cars when they want them. The problem appears to be that freight cars are not in the right place at the right time rather than not having enough cars. The solution, therefore, is to improve freight car utilization.

Because the Interstate Commerce Commission's (ICC's) authority is limited and other Federal agencies lack authority over car availability, Federal efforts to improve freight car utilization have not been too successful. The rail industry will have to solve the problem. As an aid to the industry, the recently approved rail deregulation act, the Staggers Rail Act of 1980, authorizes that Federal funds available to assist railroads can be used for car management systems to improve car utilization. However, this will not necessarily make funds available to all railroads that might be interested in such a system. In any event, operating changes alone will not significantly reduce the shippers' inability to obtain freight cars on demand. An economic incentive could be used to smooth out the demand for cars. The Staggers Act permits greater pricing freedom but it is too early to evaluate this legislation's effects. (See pp. 33 to 49.)

The exact extent that freight cars are unavailable to shippers when they want them is not known because data is unreliable. There are no controls over the system for reporting unfilled orders and shippers frequently inflate car orders as a hedge to ensure they receive some cars during periods of short supply. However, industry data indicates the total number of unfilled freight car orders is small compared to the number of cars available for service. At their worst, unfilled orders never exceeded 4 percent of the serviceable fleet nationally during 1973-78. (See pp. 7 to 9.)

Freight cars are unavailable chiefly because they are not used efficiently. The car cycle, the period between loads, averages about 26 days, an increase of 7 days in the last 25 years. (See pp. 33 and 34.) The principal bottleneck in the cycle is the freight yards, where cars are received, classified, and coupled into trains. Freight cars spend 60 percent of their time in these yards. Because of these long delays, the average freight car moves less than 60 miles a day. (See pp. 34 to 36.)

ICC's efforts to increase the availability of cars have met with little success. The courts have ruled that ICC may not impose performance standards. Therefore, ICC has traditionally approached the freight car problem by restricting or directing the movement of particular cars. (See pp. 14 to 32.) Attempts to compel the railroads to increase or repair their fleet were abandoned when legislation altered ICC's authority. (See p. 19 and pp. 28 to 31.) Moreover, ICC does not have adequate data on which to base or evaluate the results of its actions to improve freight car utilization or supply. Thus, some of ICC's actions actually may have added to the inefficient use of freight cars by increasing empty car miles. (See pp. 15 to 26.) ICC has recently investigated various policies and modified or eliminated regulations contributing to these inefficiencies. (See pp. 20 to 23.)

Rather than adding more cars, the freight car problem could be reduced, in the long run, through technical and economic changes. The railroads could improve utilization and balance distribution by developing and using a computerized, nationwide system of car management.

Current studies funded by the Federal Railroad Administration show the potential for controlling each aspect of freight car movement from origin to destination. (See pp. 40 to 44.) The interdependent nature of the industry dictates cooperation. However, while the rail industry has sophisticated computer capability, each railroad has developed its own computer system with varying functions, support

systems, and quality of data. Furthermore, the costs to develop a uniform, compatible car management system may be more than some railroads will be willing to spend. There are uncommitted funds authorized under title V of the Railroad Revitalization and Regulatory Reform Act of 1976 which could be used for this purpose but these funds may not be available to all railroads wanting to participate in the system. (See p. 44.)

Improved utilization can greatly increase car availability. However, railroads probably will still be unable to satisfy the demand for cars at all times. Maintaining enough cars to serve any possible demand would be economically inefficient. An economic incentive could be used to defer or transfer the peak demand for freight cars to supplement improved utilization. Permitting railroads to adjust freight rates based on demand may accomplish this objective by forcing shippers to consider the economic impact of transportation charges and possibly deferring the demand to nonpeak periods. Until recently, the railroads' ability to adjust rates was severely restricted. The Staggers Rail Act of 1980 has removed some of these restrictions but it is too early to evaluate the impact of this greater pricing freedom. (See pp. 45 and 46.)

RECOMMENDATIONS TO THE CHAIRMAN, INTERSTATE COMMERCE COMMISSION

The Chairman should:

--Prescribe specific criteria for issuing emergency car service orders and establish a system to control and evaluate the effects of these orders.

--Study whether penalties induce shippers to release cars faster and whether prompt release results in more efficient use of these cars.

--Work with the rail industry and the Federal Railroad Administration to develop the technology and cooperation needed to implement a compatible management information system.

RECOMMENDATION TO THE SECRETARY OF TRANSPORTATION

GAO recommends that the Secretary direct the Administrator, Federal Railroad Administration, to continue to develop and demonstrate improved railroad car management and control methods that could be used in a compatible nationwide system and to use available assistance programs to encourage railroads to install and use such systems.

FURTHER ALTERNATIVES FOR THE CONGRESS

Recent congressional actions should alter railroad pricing and operations and as these changes take place, the problems discussed in this report may be alleviated. If they are not, the Congress has other options. It could provide more direct financial assistance to encourage railroads to make needed improvements and/or permit greater pricing freedom. These alternatives should be considered if the Congress concludes that railroads are not providing adequate service after the changes permitted by the Staggers Act are in place.

AGENCY COMMENTS AND GAO's EVALUATION

In general, ICC, the Federal Railroad Administration, and the Association of American Railroads agreed with the principal findings of this report. GAO made some technical modifications, additions, and deletions based on their comments to update the report to reflect recent developments.

The Department of Agriculture expressed various problems with much of the report. The Department's comments relate mainly to the problems of rail transportation in the grain industry. From their point of view, a shipper's inability to obtain freight cars in the quantities and at the time desired, no matter what the reason, constitutes a shortage in the eyes of that shipper. The Department maintains that (1) GAO minimizes the grain shipper's problem by failing to mention that in 1978

approximately 50 percent of the total reported "shortages" were for jumbo covered hopper cars used extensively by the grain industry, (2) GAO's recommendation concerning the rail industry's need to improve utilization of the existing fleet is a simplistic solution, (3) increased pricing flexibility will not reduce the demand for cars in the grain industry, and (4) perhaps the public good requires a degree of excess capacity in the railroad system.

GAO's report is directed to national rail transportation, not merely the grain industry. Overall, the shippers' inability to obtain cars when needed is small in relation to the total number of cars available. However, GAO does point out that the number of unfilled orders for grain-carrying cars is the highest of any car type. (See pp. 9 and 10.)

The Department discusses very briefly certain actions which could result in improved railroad operations. However, it characterizes improved utilization as a simplistic solution while admitting that adding more freight cars to a congested system would be counterproductive. GAO believes that improved utilization is the key to minimizing unfilled car orders in the long run. The railroads could improve utilization through a computerized, nationwide management information system, a corrective measure not suggested by the Department. In addition, the railroads may be able to use greater pricing freedom to smooth out the demand for cars.

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ABBREVIATIONS

AAR	Association of American Railroads
DOT	Department of Transportation
FCUP	Freight Car Utilization Research-Demonstration Program
FRA	Federal Railroad Administration
GAO	General Accounting Office
IC Act	Interstate Commerce Act
ICC	Interstate Commerce Commission
Train II	Telerail Automated Information Network, second generation system
USDA	Department of Agriculture
4R Act	Railroad Revitalization and Regulatory Reform Act of 1976

GLOSSARY

Average agreement (demurrage)	A demurrage contract between a shipper or receiver and a railroad whereby the shipper or receiver is debited for the time cars are held for loading and unloading beyond a certain period ("free time") and credited for the time cars are released within the free time. Credits are offset against debits monthly and the railroad assesses demurrage charges for any outstanding debits.
Bad order	A freight car needing repair--an unserviceable car.
Block	A group of cars classified for movement to the same yard or terminal.
Bunching	A condition at a shipper's or receiver's facility resulting from receiving more freight cars than ordered or when freight cars are received contrary to customer schedules.
Car cycle	The period between one load and the next; also referred to as turn-around time.
Car hire (per diem)	The payment of rental fees by one railroad to another for using its cars.
Car service	The use, control, supply, movement, distribution, exchange, interchange, and return of locomotives, cars, and other vehicles used to transport property--but not the quality of service provided.

Car service rules	Rules agreed to by the railroads which govern all aspects of moving and using freight cars operated in interchange service. Car service rules 1 and 2 require a railroad terminating a general service foreign car to load it and route it to, toward, or via the owning railroad or return the car empty.
Class I railroad	A railroad whose annual operating revenue is $50 million or more.
Clearinghouse	A voluntary undertaking in which participating railroads freely use other members' freight cars as if the cars were their own. This reduces the number of empty car miles and car days as a result of observing car service rules 1 and 2.
Crosshauling	Empty freight cars passing one another going in opposite directions toward their respective home railroads.
Demurrage	A charge assessed a shipper or receiver for holding a freight car beyond the free-time period specified in the applicable demurrage tariff for loading and unloading.
Foreign cars	Railroad-owned freight cars moving on a railroad's line but not owned by the railroad.
Free-running freight cars	Cars not subject to car service rules 1 and 2.
Free time	The time allowed without charge in demurrage tariffs for loading and unloading freight cars at a shipper's or receiver's dock.
Home car	A freight car operating on the tracks of its owner.

Incentive per diem	An additional car-hire fee intended to increase earnings on cars found to be in short supply, to encourage investment, and to stimulate movement and return of these cars to owners.
Interchange	The location, period of time, or process of transferring freight cars from one railroad's line to another's line.
Light repairs	Repairs which take 20-staff hours or less to accomplish. They are usually done by the operating railroad on repair tracks adjacent to train yards.
Linehaul	The movement of freight over a railroad's tracks from one town or city to another town or city (not a switching service).
RAILBOX	A wholly owned subsidiary of the Trailer Train Company operating a pool of plain boxcars and double-door boxcars described as "free runners" because they are exempt from car service rules 1 and 2.
Revenue ton-mile	The movement of one ton of revenue freight 1 mile.
Rolling stock	The freight (and passenger cars) owned by a railroad, not including motive-power equipment.
Short-line railroad	A railroad, generally operating less than 100 miles of track, which originates and/or terminates freight traffic.
Switching	The movement of freight cars within terminal areas for loading, unloading, or train makeup or breakup.

Switching and terminal railroad	A railroad performing switching service only, furnishing terminal trackage, bridges, or other facilities, or which may incidentally conduct a regular freight service. Switching service may involve the following functions which are performed under yard rules and regulations: classifying freight cars according to commodity and destination, assembling freight cars for train movement, and placing locomotives and freight cars for repair and storage.
Tariff	The dollar charge on a given class of transportation movement.
Terminal	Facilities provided by a railroad at a terminus or an intermediate point on its line for handling passengers or freight and for breaking up, making up, forwarding, and servicing trains and interchanging with other carriers.
Ton-mile	Moving a ton of freight 1 mile. Ton-miles are computed by multiplying the weight in tons of each shipment transported by the distance hauled.
Trackage rights	Permission granted a railroad to operate some or all of its trains over another railroad's tracks.
Waybill	The official document used to identify the shipper and the consignee, present the routing, describe the goods, present the applicable rate, show the weight of the shipment, and note other useful information. A waybill is prepared at the point of origin.
Yard	A system of tracks within defined limits used for switching or storing cars.

CHAPTER 1

INTRODUCTION

The United States has nearly 500 railroads whose assets total about $29.2 billion. They are the principal carriers for many bulk materials and agricultural products. Rail is the most energy-efficient mode of bulk transportation over land and is able to provide services to many shippers at far lower cost than other modes.

The railroad industry is also unusual among industries because one of its major assets, freight cars, can be freely interchanged and used by any railroad or customer. On the average about 70 percent of rail freight traffic moves over more than one railroad. To serve this traffic the railroads must cooperate with one another to coordinate their operations, and, in general, perform as a national system. Most of the major sources of rail traffic, however, are served by two or more railroads; consequently the railroads find themselves competing with the same carriers upon whom they depend and with whom they are obliged to cooperate.

Once the lifeblood of the Nation's distribution system, the rail industry has fallen on hard times. Its $21.8 billion of revenue in 1978 provided less than a 2-percent return on investment. Consequently, many companies are teetering on or have gone over the brink of bankruptcy. Unable to substantially increase their supply of capital, the railroads have run up a backlog of maintenance and capital improvements estimated at over $4 billion. One study estimated new investments would fall $13 billion to $16 billion short of needs during 1976-85.

Symptomatic of the rail industry's ill health are shippers' constant complaints that they cannot obtain enough freight cars when needed. In a 1975 Department of Transportation (DOT) survey, only 65 percent of industrial shippers reported adequate equipment availability. Agricultural shippers also are dissatisfied. Each year, piles of grain are dumped on the ground because elevators are full due in part to insufficient freight cars to move the grain. Market price levels also affect grain storage. In April 1978, the reported unfilled freight car orders averaged about 66,000 a day.

FEDERAL AGENCIES CONCERNED WITH RAIL TRANSPORTATION

The National Transportation Policy Study Commission 1/ has identified 64 Federal agencies and 30 congressional committees having jurisdiction which affects transportation. Some of these organizations, such as the Civil Aeronautics Board, have nothing to do with rail transportation. Others are only incidentally involved; for example, the Environmental Protection Agency in its pollution control activities. The principal organizations involved in rail freight transportation are the Interstate Commerce Commission (ICC) and DOT's Federal Railroad Administration (FRA). In addition, because agriculture depends on railroads to move large quantities of bulk commodities, the Department of Agriculture (USDA) has responsibility for encouraging a viable rail freight system. The Secretaries of Transportation and Agriculture were the Cochairmen of the recently disbanded Rural Transportation Advisory Task Force.

Interstate Commerce Commission

ICC was created in 1887 as the first independent regulatory agency. It currently regulates about 19,000 companies providing domestic surface transportation, including railroads, trucking companies, bus lines, and coal slurry pipelines. Originally ICC had only limited authority, but over the years legislation has increased its power and broadened its jurisdiction. This legislation included the Elkins Act of 1903, which prohibits discrimination in rail rates and charges, and the Esch Car Service Act of 1917, which authorizes ICC to determine reasonable freight car service rules and to adjust the freight car supply during emergencies.

ICC decides when companies may enter and leave the rail industry and when they may merge, approves the securities they issue, assures that rates and practices are just and reasonable, requires that the public and shippers be protected from loss and damage, and regulates the movement of hazardous materials. ICC was responsible for rail safety until FRA was established in 1967.

1/The Commission was established under Public Law 94-280, section 154, May 5, 1976, to study transportation needs and the resources, requirements, and policies to meet them through the year 2000.

Until the Staggers Rail Act of 1980 (Public Law 96-448) was enacted on October 14, 1980, rail transportation was completely regulated while other modes were only partially regulated. Therefore, ICC's authority over rail transportation was extremely broad. One of its principal areas of control is in "car service"--the use, supply, movement, distribution, exchange, and interchange of equipment. ICC believed its authority in this area was unlimited, subject only to legal action, but the Staggers Act has reduced ICC's regulation of the rail industry.

Federal Railroad Administration

FRA was created in 1967 as part of DOT. FRA is primarily responsible for assuring that the United States has a safe, efficient, privately owned railroad network capable of meeting its transportation needs. FRA administers and enforces rail safety laws and regulations and researches and develops projects involving safety, reliability, and efficiency. FRA also participates in developing Federal policy in such areas as freight car utilization, rail service reliability, and railroad economics. It also administers a program of Federal assistance for regional and local rail service under various laws, such as the Railroad Revitalization and Regulatory Reform Act of 1976 (Public Law 94-210, known as the 4R Act). While ICC has broad authority to enforce its mandate, FRA has no authority to require the railroads to adopt the improvements it develops. Its enforcement authority is limited to rail safety.

Department of Agriculture

Since railroads are particularly well-suited for moving large quantities of bulk commodities over long distances, they are important to the rural community both for taking products to market and bringing in agricultural supplies and equipment. Since 1938 the Secretary of Agriculture has represented agricultural interests before regulatory agencies. USDA's Agricultural Marketing Service studies the distribution of food and other farm products and performs or sponsors research to improve handling of all agricultural products as they move from farm to consumer.

Because of the emphasis on transportation problems, the various transportation functions within USDA were consolidated into the Office of Transportation in 1979. Although concerned with a significant part of the Nation's economy, USDA's transportation program is strictly advisory, with no regulatory or enforcement authority.

Rural Transportation Advisory Task Force

Public Law 95-580, signed November 2, 1978, established a 16-member Rural Transportation Advisory Task Force, with the Secretaries of Transportation and Agriculture as cochairmen. The objectives of the task force were to (1) determine the transportation needs of agriculture, (2) establish a national agricultural transportation policy to meet them, and (3) identify impediments to such a policy. The task force's final report was issued to the Senate Committee on Agriculture, Nutrition and Forestry and the House Committee on Agriculture in January 1980. This report contained about 40 recommendations, half of which related to rail transportation. The task force has disbanded, and implementing the recommendations is now the responsibility of the Congress, Federal and State agencies, and the railroads.

OBJECTIVES, SCOPE, AND METHODOLOGY

Congressman Dan Glickman, Member, House Committee on Agriculture, asked that we investigate the freight car shortage and the Federal Government's response to it. We also undertook this review because of our awareness of the reported chronic and escalating recurrence of shippers' inability to obtain freight cars. Our purpose was to determine the extent of the problem, the operating factors contributing to it, whether Federal actions aggravate the situation, and to propose possible solutions.

The railroads' financial condition and the related issues of freight revenues and rate freedom affect the industry's ability to provide adequate service. In addition, the industry needs an effective accounting system to financially measure all activities involving freight car movement. This review, however, concentrates on railroad operations and the need for improving freight car utilization and customer service.

In addition, the Staggers Rail Act of 1980 was signed on October 14, 1980, just before this report was to be issued. This legislation to deregulate the rail industry will have a significant impact on railroad operations and may help minimize unfilled car orders. However, because this law was enacted after our audit work was completed, we did not determine the legislation's impact on freight car utilization, but we did make technical changes to the report.

Our review was conducted primarily at ICC and FRA headquarters, and the Department of Agriculture's Office of Transportation in Washington, D.C., where rail transportation

policy is made and where documents supporting the policies and actions implementing them are maintained. Limited work performed at one ICC and one FRA regional office disclosed that field offices had little direct responsibility or had documents we needed.

We examined the legislative authority and mandates of the Federal agencies as they pertain to rail transportation; reviewed policies and procedures relating to the apparent freight car shortages; reviewed reports, studies, and ICC proceedings; interviewed management officials and operating personnel concerning the adequacy of rail equipment and service, quality of service, and freight car utilization; and analyzed data on unfilled freight car orders, cars in need of repair, and justifications and results of specific actions taken to improve freight car utilization or distribution. We also discussed the shippers' inability to obtain freight cars when needed and overall problems of rail transportation with representatives of the Rural Transportation Advisory Task Force and reviewed its reports and minutes of its meetings and public hearings.

We met with officials of the Association of American Railroads (AAR), the rail industry's trade representative, to discuss the freight car problem; factors affecting it; the impact of Federal actions on the rail industry regarding freight car supply, distribution, and utilization; and industry car scheduling systems. We also made extensive use of the financial and operating statistics accumulated by AAR on the rail industry.

AAR and FRA jointly finance the Freight Car Utilization Research-Demonstration Program to improve rail productivity. We met with the program's officials and reviewed numerous reports. These reports included information on the decline in efficient rail transportation, causes for the decline, solutions such as free-running cars discussed in chapter 3 and improvements in yard and terminal operations discussed in chapter 4, and analysis of the impact ICC and AAR directives had on freight car movement.

We visited six railroads, including one in Canada, to discuss freight car utilization directly with operating units and obtain firsthand opinions on unfilled freight car orders, systems for freight car scheduling and distribution, financial problems, and the impact of Federal action on operations. To expand our coverage of operating

railroads, we also sent each Class I freight railroad 1/ a questionnaire on operating practices, such as car scheduling and freight car repair. Of the 36 questionnaires sent, 32 were returned. We did not verify the information provided but did make inquiries to clarify and amplify some of the information.

To obtain the transportation customer's view of the problem, we talked with officials of the National Industrial Traffic League, which represents shipping interests in ICC proceedings, and contacted other shipper organizations and individual shippers. We also talked to officials of two State Departments of Transportation. We reviewed these organizations' reports on rail problems and proposals to resolve them.

1/ICC classifies railroads according to their annual operating revenues. Effective January 1, 1978, Class I railroads are those with annual operating revenues of $50 million or more. Class I railroads operate approximately 96 percent of the total railroad mileage of the United States and earn about 99 percent of the operating revenues of linehaul railroads.

CHAPTER 2

THE FREIGHT CAR SHORTAGE--REAL OR ILLUSORY?

Despite the regular complaints of shippers, the number of unfilled freight car orders is small in comparison to the size of the freight car fleet. By figures which may be inflated, the overall shortage never exceeded 4 percent of the serviceable fleet during 1973-78. For certain types of cars, particularly those used to haul grain, the shortage has occasionally exceeded 8 percent. However, the rail industry's gross performance has remained relatively constant. For the last 25 years, the volume of freight originated has been around 1.4 billion tons annually, and this has been accomplished over longer distances with fewer cars.

DATA IS QUESTIONABLE

The accuracy of the data used to measure the freight car shortage has been challenged by the railroads and Federal agencies. ICC does not obtain shortage data directly but relies on data which Class I railroads submit to AAR in a weekly report on unfilled car orders. Shippers, however, are thought to inflate their orders to help them meet their needs when supplies are short. Thus, ICC discounted reported car shortages by half in a 1969 study. Moreover, since AAR has no authority to force railroads to report accurately, there is no assurance that all railroads compile the data the same way, and its accuracy has never been verified by audit.

REPORTED SHORTAGE--A SMALL PROPORTION OF THE FLEET

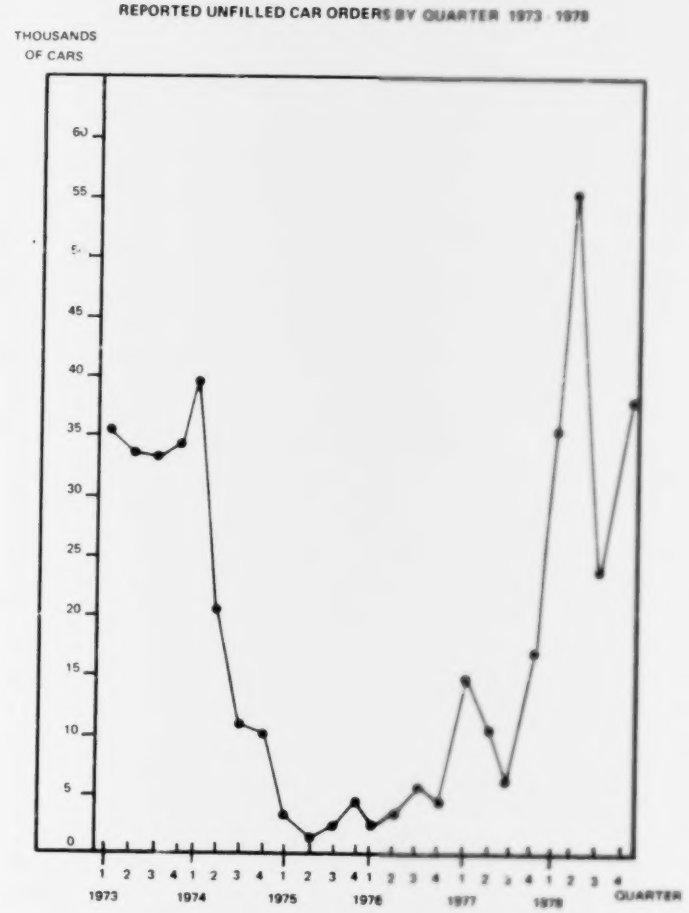
Unreliable though it may be, the best data available shows a small overall car shortage. During 1973-78 the shortage ranged from 0.1 to 3.7 percent of the serviceable fleet. Shortages of particular cars, such as hoppers and boxcars, were sometimes higher.

Overall shortage

Reported car shortages fluctuate continually, and the problem is both cyclical and geographical. The fertilizer industry in the Southeast, for example, complains about the lack of a particular car type to move its products before planting season. Later, there are complaints of inadequate supply of the same and similar cars to move agricultural products in other parts of the country at harvest time. Moreover, there can be a shortage of one car type while

there is a surplus of another type, and the same car type can be short in one location while surpluses exist in other locations.

In an ICC analysis covering 1973-78, the average daily shortages for all cars ranged from a low of 1,200 in the second quarter of 1975 to a high of 55,400 in the second quarter of 1978, as shown in the graph below. In 1979 the shortages averaged about 28,000 cars for much of the year.



These shortages, even at the peak second quarter of 1978, never exceeded 4 percent of either the total or the serviceable fleet. In addition, to meet 100 percent of peak demand would not be feasible because it would result in too many idle cars when demand falls. In 1975 and 1976, for example, when less than 1 percent of the car orders were unfilled in some locations, from 30,000 to 70,000 cars were standing idle. The following table summarizes shortage data for selected periods.

Freight Car Shortages as a Percentage of the Car Fleet

Period		Fleet			Percent of fleet	
			Serviceable			Serviceable
Year	Quarter	Total	(note a)	Shortage	Total	(note a)
		--------(thousands)-------				
1973	1	1,718.1	1,619.6	35.3	2.06	2.18
1973	4	1,711.3	1,604.6	34.2	2.00	2.13
1974	1	1,712.1	1,604.9	39.8	2.33	2.48
1974	4	1,718.2	1,607.6	10.0	0.58	0.62
1975	1	1,721.4	1,606.3	3.2	0.19	0.20
1975	2	1,722.4	1,596.9	1.2	0.07	0.08
1975	4	1,725.1	1,579.7	4.9	0.28	0.31
1976	1	1,715.7	1,568.7	2.8	0.16	0.18
1976	4	1,701.8	1,550.3	5.6	0.33	0.36
1977	1	1,696.2	1,546.9	15.0	0.88	0.97
1977	4	1,670.7	1,524.3	17.0	1.02	1.12
1978	1	1,659.4	1,506.9	35.9	2.16	2.38
1978	2	1,653.4	1,498.1	55.4	3.35	3.70
1978	3	1,652.1	1,503.1	24.1	1.46	1.60
1978	4	1,651.3	1,513.5	38.3	2.32	2.53

a/Excludes cars in need of repair due to damage or routine maintenance.

Shortages of particular cars

Shippers are interested in particular car types. The following table shows that during 1973-78, unfilled orders stayed below 4 percent for all principal car types, except for 40-foot, narrow-door boxcars and covered hopper cars.

Freight Car Shortages as a Percent of
Serviceable Car Fleet for Various Car Types

Period		Boxcars					Gondolas			
Year	Quarter	Plain	40-ft. narrow-door	Equipped	Covered hoppers	Refrigerators	Plain	Equipped	Hoppers	Flats
1973	1	2.2	7.3	0.8	8.0	0.2	1.0	1.5	0.4	0.6
1974	1	3.0	6.4	1.0	6.1	0.5	3.6	3.7	0.8	1.6
1975	1	-	-	-	0.6	-	0.8	0.4	0.2	0.2
1976	1	0.2	-	0.1	0.7	-	0.2	0.7	-	0.1
1977	1	0.8	1.5	0.5	4.2	0.2	0.6	1.4	0.2	0.2
1978	1	2.9	5.4	0.7	9.0	0.6	2.1	2.1	0.5	0.7
1978	2	3.3	8.2	0.5	13.4	0.5	3.3	1.1	2.3	0.9
1978	3	1.0	3.8	0.3	4.8	0.1	1.5	0.4	1.8	-
1978	4	1.5	6.1	0.5	8.3	0.2	2.4	2.1	2.3	0.4

The 40-foot, narrow-door boxcar and the covered hopper car are both used extensively in the grain trade, so shortages of these cars are a serious problem for grain shippers. The railroads, however, consider the 40-foot, narrow-door car to be obsolete. It has a capacity of only 2,000 bushels, compared with covered hoppers' 3,500 bushels. The industry is acquiring covered hoppers about as fast as they can be manufactured; the number increased from 205,000 in 1973 to 246,000 in 1978. The U.S. production of this car is also backlogged almost 2 years. Moreover, despite the comparatively high number of reported shortages for grain-moving cars, railroads moved more grain in larger loads in 1978 than in the previous year.

RAIL FREIGHT VOLUME HAS REMAINED RELATIVELY CONSTANT

Three factors are frequently pointed out as indicative of the rail industry's decline and poor service--the decline in the number of cars, the decline in total carloadings, and the increase in the car cycle or the period between loads. However, while these factors do present a gloomy picture, other factors tend to offset them and, in fact, the rail industry's performance has remained relatively constant in gross terms.

Offsetting the decline in the number of cars and carloadings is the increase in the average size of the freight car. This has resulted in an increase in the average load per car, and the total tons moved have remained relatively constant. In addition, these same tons have been moving over greater distances, a factor which contributes to the increase in the car cycle. For example, the car cycle

has increased by about 35 percent, and the average distance traveled by a freight shipment has also increased 35 percent. A comparative analysis of the various factors during 1955-78 is shown in the following table.

Comparative Measures of
Rail Performance
1955-78

	1955	1978	Change Amount	Change Percent
Freight cars (millions)	2.0	1.7	- 0.3	-15
Revenue carloadings (millions)	37.6	23.4	-14.2	-38
Car cycle (days)	19.0	25.7	6.7	35
Average car capacity (tons)	53.7	76.7	23.0	43
Average carload (tons)	42.4	62.1	19.7	47
Tonnage originated (millions)	1,396.0	1,389.0	-7.0	-
Average haul per ton (miles)	430.0	587.0	157.0	37
Revenue ton-miles (billions)	623.6	858.1	234.5	38
Revenue ton-miles per loaded car	16,570.0	36,714.0	20,144.0	122

The rail industry, therefore, is moving the same amount of freight today over longer distances with fewer but larger cars.

CONCLUSIONS

Although shippers have persistently complained of their inability to obtain freight cars on demand, unfilled orders never exceeded 4 percent of the serviceable fleet during 1973-78. Moreover, data on unfilled car orders is of questionable accuracy because shippers are thought to inflate their orders during peak demand periods. It is also unreasonable to expect to fill all car orders at all times because to do so would result in high levels of idle cars when demand slackens. For grain cars, where the peak shortages are highest, the railroads are increasing their car supply and the annual volume of shipments. The rail industry in total is also moving as much freight today as it did 25 years ago with fewer but larger cars.

Finally, the fact that car surpluses in some locations frequently exist simultaneously with shortages elsewhere suggests that the problem is more one of not having cars in the right place at the right time than not having enough cars. Thus, the solution to car availability rests not so much with ICC but with improving utilization of the existing fleet. In addition, permitting the industry to adjust rates in accordance with demand could be used to defer peak demand for cars. These solutions and recommendations are discussed in chapter 4.

AGENCY COMMENTS AND OUR EVALUATION

FRA and AAR generally agreed with our findings. ICC, however, believes that our computation of an overall shortage of 4 percent of the serviceable fleet is an overgeneralization that masks serious shortages at some times and places as well as car surpluses, and that our data should be presented on a monthly and regional basis for a more accurate picture. ICC also believes the period of the car cycle should be factored into any computation of shortages. USDA characterized our data as misleading because it does not show that a significant proportion of the reported shortages are freight cars used by the grain industry.

We recognize that our data could be presented in various ways. However, we used ICC's own internally reported data which was broken down on a national basis by quarters rather than in a more voluminous monthly and/or regional format. Also, we could find no way to make a regional comparison of reported unfilled freight car orders. Since the free interchange of cars requires the railroads to operate as a national system, there is no regional car fleet for comparison purposes. Our report does mention the cyclical and geographical nature of unfilled orders and, while not shown statistically, we also state that car orders can be unfilled in one location at the same time car availability exceeds demand elsewhere.

We do not agree that the period of the car cycle should be factored into our computations. To do so would grossly distort the picture. For example in 1978, the average car cycle was 26 days and the average daily reported unfilled orders in the second quarter of 1978 was 55,000 cars. Multiplying these unfilled orders by the cycle, as suggested by ICC, would lead the reader to believe that an additional 1.4 million cars were needed to satisfy demand, a figure almost equal to the serviceable fleet on hand at that time. In addition, since car orders can be unfilled in one location while car availability exceeds demand elsewhere, part of the shippers' inability to obtain freight cars is due to

cars not being in the right place at the right time rather than not having enough cars. Lastly, as we discussed, requiring enough cars to meet 100 percent of demand would be economically inefficient because it would result in too many idle cars when demand falls. In fact, AAR commented that by June 1980 Class I railroads had a surplus in excess of 110,000 cars.

While we were concerned with rail transportation in general, not particular commodities, we did mention that the number of unfilled orders for grain-carrying cars is the highest of any car type. We also point out that the railroads are adding to their fleet of grain-carrying cars about as fast as possible. USDA's own data shows that the number of jumbo covered hopper cars increased by 4,300 to 98,900 cars in 1978 alone.

CHAPTER 3

TRADITIONAL SOLUTIONS HAVE NOT RESOLVED SHIPPERS' INABILITY TO OBTAIN FREIGHT CARS

ICC has tried to find short- and long-term solutions to the freight car problem. It has directed railroads to use their cars in certain ways or to provide more cars. But the unavailability of cars has remained a problem.

ICC's operating procedures may contribute to the ineffectiveness of its efforts to resolve the problem. ICC actions are not always adequately supported or based on verified data; in some instances its authority is questionable; it does not always clearly define objectives; and it lacks a systematic approach to monitor and evaluate the effects of its actions. ICC's actions may aggravate problems rather than help resolve them.

SHORT-TERM SOLUTIONS--ICC DOES NOT KNOW IF EMERGENCY SERVICE ORDERS HELP OR HINDER CAR PROBLEMS

ICC tries to alleviate emergency rail equipment problems by using temporary "car service orders"--orders that direct railroads to move cars in a particular way. However, these orders are generally not based on reliable factual data; "emergency" has not been clearly defined; and ICC does not determine whether they actually help the problem they are intended to resolve. The orders were extremely controversial, and the Staggers Rail Act of 1980 now limits ICC's authority to issue the orders.

What are service orders?

Car service orders are issued under the emergency powers of section 1(15) of the Interstate Commerce Act (IC Act), (49 U.S.C. 1 *et seq.*). 1/ This section provides that in any emergency, such as a car shortage, ICC may suspend all rules and regulations and direct the railroads to distribute and use these cars in certain ways.

1/The Interstate Commerce Act was recodified without substantive change by Public Law 95-473, enacted October 17, 1978. For this report we will refer to sections of the act prior to recodification.

There are several types of temporary orders, each purporting to obtain better use of available cars.

Embargoes--restrict movement to certain locations because of congestion.

Rerouting orders--direct or reroute loaded and empty freight cars when a railroad is temporarily unable to move traffic over its line.

Car distribution directives--relocate empty cars in a period of inequitable distribution.

Unloading orders--require cars to be unloaded when held loaded an inordinate amount of time.

Exclusion orders--exclude cars from general use and order them back to the lines that own them.

Movement orders--require that cars be placed, pulled, repaired, cleaned, and forwarded promptly.

Tariff modifications--change tariff provisions to encourage better car utilization.

Other--primarily involve orders permitting one railroad to use another railroad's rail lines in emergencies.

ICC issues orders when an interested party complains or when it determines that an emergency exists. During 1959-79 ICC issued 478 orders. The number has increased substantially in recent years. For example, 2 orders were issued in 1961 and 1962, while 56 were issued in 1978 and 54 in 1979.

ICC's service order system needs improvement

We reviewed a limited number of service orders (13) issued between September 1972 and October 1979 and found that supporting data was not available to justify the orders; data submitted by interested parties requesting an order was not verified; and no evidence existed that ICC staff verified the justifications for a request for an exemption. ICC operating personnel told us that the orders were issued based on their personal knowledge of conditions through informal contacts within the industry. They consider this necessary because service orders are issued on short notice to resolve emergency situations.

ICC, however, has never clearly defined the parameters of an emergency, and the purpose for which orders have been

issued varies widely. For example, in May 1979 the Consolidated Rail Corporation could not service shippers located on a segment of its line because of weight restrictions on a bridge damaged by a flood. Service Order 1378, effective May 7, 1979, authorized the Hillsdale County Railway Company to operate over this track for about 2 months to service these shippers.

On the other hand, in March 1973, ICC concluded that there was an acute shortage of various types of freight cars and shippers contributed to the shortage because they were holding cars too long for loading and unloading. ICC, therefore, issued Service Order 1124, effective March 16, 1973, to decrease the time allowed by shippers to load or unload cars and increased the charges for detaining cars beyond this period. The objective of the order was to have cars released faster. This order, however, was revised and amended eight times, extending the order to December 1974. Thus while service orders are supposed to be temporary measures to handle emergencies, we found orders in effect for up to 2 years with no justification on file for the numerous extensions. Nine of the orders we reviewed were extended at least once.

ICC has no system to evaluate the effects of its orders and, with one exception, has never made such an evaluation. To evaluate the impact of service orders would require detailed knowledge of conditions that led to the order and an analysis of conditions during and after the order to determine change. Since ICC files, however, do not contain information to support the issuance of the orders, ICC cannot evaluate service orders effectively because it is difficult to develop data on preorder and postorder conditions. Moreover, without such data we were also unable to determine what impact, if any, these orders have on car utilization.

Because of allegations that service orders were ineffective, the Bureau of Operations, Section of Rail and Pipeline Operations, made a special evaluation in 1979 of a service order that had been removed in May 1978. This order was selected because it was only in effect for about 1 month and involved only 11 railroads.

The service order directed 11 railroads in the western part of the United States to allocate 40 to 70 percent of their jumbo covered hopper cars to grain service and no less than 50 percent of this portion to country elevators. ICC's evaluation of the order concluded that 1,950 more cars were given to country elevators during the order than were supplied before the order.

However, our analysis of ICC's data showed that if all 11 railroads had limited themselves to the 50-percent minimum required by the order, country elevators would have received 8,600 fewer cars than they did and 6,700 cars less than were supplied before the order was issued. The 11 affected carriers had approximately 60,000 jumbo covered hopper cars in service during the period of the order. The order required that about 33,000 cars had to be used for grain service with 16,500 allocated to country elevators. The carriers as a unit supplied 33,000 cars but distributed 25,100 of them to country elevators. This is about 8,600 more than required by the service order. Moreover, the railroads had given country elevators about 23,200 covered hopper cars for a similar period immediately before the service order. If the railroads had limited the cars to the minimum required, they could have reduced the number supplied country elevators to 16,500, or 6,700 cars less than were previously supplied.

Current limits
on service orders

Because of the dramatic increase in service orders, railroads objected to ICC's increasing infringement on their management decisions. ICC, on the other hand, argued that with the inefficient utilization of cars and the resulting inability of shippers to obtain cars, it had the responsibility to do everything possible to alleviate the situation. However, at the same time ICC acknowledged that service orders do not solve the long-term problems but are simply an attempt to allocate the problem equally among all railroads and shippers. ICC's Chairman stated that service orders sometimes result in less efficient car utilization in the interest of equity.

As a result of this controversy, the industry wants ICC to stop issuing service orders. DOT in its proposals for rail deregulation recommended that emergency be defined in extremely narrow limits, that the President be responsible for designating the emergency condition, and that DOT rather than ICC issue orders in the infrequent instances when an emergency exists.

On April 1, 1980, the Senate passed its railroad deregulation bill (S. 1946) which also contained a provision limiting the issuance of service orders. The bill limited emergency situations to those which "have substantial adverse effects on rail service to the Nation or a substantial region of the Nation." In addition, a service order would expire in 30 days unless ICC had begun a proceeding to solve the problem on a more permanent basis. If ICC had done so, the order could be renewed and extended for a maximum of 60 days.

House bill 7235, enacted September 9, 1980, defined emergency in the same manner but provided that a service order could be extended beyond the initial 30-day period only if the Secretary of Transportation certified that a transportation emergency existed.

The Staggers Rail Act of 1980, a compromise of the House and Senate bills, defines emergency as the Senate bill did but specifies that a service order will expire in 30 days unless the full Commission certifies after a hearing that a transportation emergency exists.

Emergencies, such as a damaged bridge, may arise. However, ICC acts in a wide range of situations without a clear definition of the conditions appropriate for a service order and without a system to adequately investigate and monitor the order. ICC, therefore, has no knowledge of whether the orders help or hinder shippers to obtain cars. Railroads maintain that the orders are merely an infringement on their management decisions.

ATTEMPTS AT LONG-TERM SOLUTIONS TO IMPROVE FREIGHT CAR AVAILABILITY HAVE NOT BEEN SUCCESSFUL

ICC has investigated various aspects of the freight car problem. A 1947 investigation concluded that the railroads as a group did not have enough freight cars and had not furnished adequate car service. In 1969 ICC concluded that in the 22 years since the 1947 investigation there had been little improvement in freight car service and that freight car shortages recurred because the railroads did not own enough cars or use the cars they had efficiently. In the past decade, ICC has taken actions to try to increase the available number of cars, obtain better utilization, or both. These actions included

- --accumulating annual data on the extent of individual railroad car ownership,
- --providing mandatory rules to assure that cars are promptly returned to the railroads that own them,
- --increasing the charges one railroad must pay to another railroad for use of its cars,
- --increasing the charges that shippers must pay for lengthy delays in loading or unloading cars, and
- --requiring railroads to repair unserviceable cars.

Despite these actions the car fleet continued to decline and car turnaround time continued to increase. Some ICC actions were abandoned without results and others which aggravated the problem were recently rescinded or their impact is uncertain.

Annual car ownership reporting

For a period of 10 years ICC required railroads to provide annual data on the extent of car ownership to be used to determine the adequacy of car supply. During this entire period the car supply continued to decline, but ICC never took any actions to increase the car supply as a result of this reporting requirement.

The 1947 investigation of railroad operations concluded that the railroads as a group did not have enough freight cars and had not furnished adequate car service. Since the inadequate supply of cars was attributed to the railroads' inability to acquire equipment during World War II, ICC took no remedial action.

When ICC again investigated car service in the mid-1960s, it concluded that the car supply had continued to decline. With AAR, ICC prescribed a formula in September 1969 for determining car ownership requirements. They ordered the railroads to submit annual car ownership data for use in the formula and explain steps they were taking to improve car supply. This requirement remained in effect until September 1979.

ICC made one attempt to have railroads acquire equipment based on this annual ownership data. In July 1974 ICC issued an order requiring the railroads to show cause why they should not be made to purchase additional cars. ICC based this action on section 1(21) of the IC Act, which states that ICC could require a railroad to supply itself with adequate facilities for performing as a common carrier.

There is no evidence, however, that ICC ever did more than issue the show-cause order. AAR and 22 railroads responded to the order, all objecting to it for various reasons. They challenged ICC's authority, questioned the reasonableness of the data on which the order was based, and maintained that financial conditions in the industry prevented compliance. In February 1976 section 1(21) of the IC Act was repealed and ICC finally removed the show-cause order in June 1977, without any action by either ICC or the railroads.

During the decade railroads were required to supply car inventory data, the freight car fleet declined from about 1.79 to 1.65 million cars. Thus, despite collecting data for 10 years and holding the show-cause order open for 3 years, ICC's program of car ownership reporting did nothing to help the freight car supply.

Car movement rules increase empty car miles

In 1902, the rail industry adopted a set of rules to promote prompt handling, movement, and return of freight cars. The rules are intended to permit joint use of an individually owned fleet and at the same time assure return of cars to the railroads which own them. While it is necessary to protect the loading capabilities of railroads which predominantly originate loads, these rules contribute to inefficient car utilization by forcing empty car movement. Recent experiments have shown that exempting cars from these rules improves utilization and originating railroads can be assured of an adequate supply of cars.

Because the flow of freight shipments in the United States is not evenly balanced in all directions, railroads that originate more carloads than they terminate must have a means for obtaining empty cars. The method the railroads adopted to achieve this was a voluntary code of car service rules governing all aspects of moving and using freight cars operated in interchange service. Car service rules 1 and 2 require that a railroad terminating a general service foreign car must load that car and route it to, toward, or via its owner or, if no qualifying load is available, return it empty to the owner.

ICC made rules 1 and 2 and certain supplementary rules mandatory in 1972, giving ICC the power to enforce the movement of empty cars. ICC took this action after finding that too many cars were being retained and used by railroads which terminated loads rather than purchasing their own cars. This was detrimental to the owning railroad which originates loads. The rules were intended to shift the affects of any car shortage to the railroads that did not own enough cars to handle their own business and compel them to increase their fleets.

According to a May 1979 Freight Car Utilization Research-Demonstration Program (FCUP) study, rules 1 and 2 inhibit efficient car utilization because they result in many unnecessary empty car miles, including crosshauling--empty cars passing one another going in opposite directions toward their

respective railroads. At the same time, loads to be moved in other directions must wait for an eligible empty car to become available. The empty mileage caused by the rules was so great that the railroads have taken action outside ICC and AAR to reduce it.

First they formed the RAILBOX, a wholly owned subsidiary of the Trailer Train Company, 1/ to provide a fleet of general service boxcars which would have no home railroad to which they would have to be directed when empty. The cars were exempted from rules 1 and 2 and are free to be loaded in any direction. As a result, RAILBOX cars have a loaded-miles to total-miles ratio of 89 percent, while the ratio for cars subject to rules 1 and 2 is only 67 percent. The first group of cars was put into operation in 1974 and has been increased to 23,200 cars in 1979, about 8.5 percent of the national general purpose boxcar fleet.

Second, several railroads have joined in an effort to reduce the empty car mileage for their own fleets of common usage cars--plain boxes, gondolas, and general service flats--by forming a club, called the Clearinghouse, to manage the movement of cars among the members. A member can use another's cars as though they were his own, and each week members reimburse one another with empty cars in those instances where a railroad receives more cars than it ships. A computer program determines what cars must be sent to which locations to minimize empty car movement. An FCUP evaluation of the Clearinghouse system in 1977, after 3 years of operation, concluded that it worked effectively among the members and that empty car mileage was reduced 18 percent.

Third, RAILGON, a nationwide pool of plain gondola cars with high sides, was formed in 1979 as a subsidiary of the Trailer Train Company. Management, operation, and participation will be similar to that of RAILBOX. The initial fleet size will be 4,000 cars, to be delivered between July 1980 and fall 1981.

1/Trailer Train is a 25-year old company with a pool of cars designed to carry containers and trailers. In 1978 Trailer Train was owned by 29 operating railroads, trustees of the estates of two former operating railroads and one freight forwarder. Its fleet of over 48,000 cars is approximately 86 percent of the Nation's total of these car types.

In April 1979, ICC requested comments on whether mandatory rules 1 and 2 should be discontinued because the industry experiments in free-running equipment had resulted in better car utilization. The railroad industry took the position that rules 1 and 2 should not be mandatory and in August 1980, after 8 years of operation with rules that apparently resulted in less efficient use of cars, ICC again made the rules voluntary.

Controversial car-hire rules

ICC has attempted to use the car-hire system to reduce the inability to obtain certain classes of cars. The car fleet and car utilization, however, declined during the entire decade that incentive per diem was in effect. ICC had not explicitly defined its objectives or developed the means to measure program results, and finally eliminated incentive per diem in August 1980.

When freight cars are shipped from one railroad's lines to another, the user pays the owner a rental fee called per diem. Basic per diem is intended to reimburse the carowner at rates equivalent to the average nationwide costs of owning a freight car. Before July 1978, the per diem rates were calculated on a per-day and per-mile basis. Although still referred to as per diem, they are now based on hours and mileage.

Because of shipper complaints that freight cars were in short supply, the Congress, with ICC's concurrence, amended the IC Act in May 1966 to authorize higher per diem charges for cars in short supply. The higher charge was called incentive per diem. ICC believed higher daily rates would cause railroads to return cars to their owners faster and bring about more efficient use of existing cars. Incentive per diem was also intended to help increase the size of the fleet, because the funds it generated could only be used to purchase additional cars of the same type to which the higher rate applied.

Incentive per diem was first applied in April 1970 to unequipped general service boxcars for specific periods during the year. It was extended to plain boxcars used primarily for food shipments in June 1975 and to plain gondola cars in June 1979.

In November 1977 we reported 1/ that ICC did not explicitly define its objectives and had no means to effectively measure incentive per diem program results. There also was no increase in the number of boxcars and no data to support improved use of boxcars. We, therefore, recommended that ICC discontinue the incentive per diem program.

The railroads were also very dissatisfied with incentive per diem, which they maintained did nothing to improve the boxcar situation. Moreover, the higher car-hire rates introduced a new element into car management which they contended was not intended to improve car utilization. Cars owned by private investors were being supplied solely to earn car rentals. The high rental rates made the use of these cars unprofitable to the railroads and they were perceived as syphoning funds away from the financially hard-pressed rail industry.

The rail industry also believed that the system of paying for the use of each others' cars encouraged railroads to load cars which they owned and send foreign cars home empty. If the foreign car carried a high car-hire rate, the incentive to do so increased. This resulted in wasteful cross-hauling of empty cars among railroads.

In November 1979 several operating units within ICC prepared position papers on incentive per diem. ICC's Office of Policy and Analysis concluded that incentive per diem should be eliminated because it burdened the industry with excessive costs and had not accomplished its purposes. Other ICC units disagreed, maintaining that while the program's effectiveness was uncertain, ICC should retain incentive per diem until its effects could be determined.

Also in November 1979 ICC requested comments on the incentive per diem program's effectiveness and whether it should be eliminated, changed, or maintained. A final decision on its continuation was delayed because House bill 7235 contained a provision eliminating ICC's incentive per diem authority. The House Committee on Interstate and Foreign Commerce believed that incentive per diem was not effective in attracting adequate capital into the industry. In August 1980 before passage of deregulation legislation, ICC eliminated incentive per diem charges citing, among other things, their adverse affect on freight car utilization. Finally,

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1/"Changes Needed In Procedures For Setting Freight-Car Rental Rates," (CED-77-138, Nov. 11, 1977).

section 224 of the Staggers Rail Act of 1980 repealed ICC's incentive per diem authority.

ICC does not know the effects of its demurrage policies on freight car utilization

Demurrage is a charge levied against customers for retaining a freight car beyond authorized free time for loading and unloading. Its objective is to minimize the amount of time cars stand idle. During the 1970s ICC made several changes to the demurrage rates and regulations to strengthen the penalties for detention. While ICC and the railroads considered these changes to be a means for improving car utilization, ICC has never evaluated whether demurrage actually accomplishes this objective. Shippers, moreover, disagreed with the industry position, blaming operational practices for prolonged detention. Despite demurrage changes, freight car utilization has continued to decline; demurrage collections are increasing; and the only study ever made discounts demurrage as a mechanism for improving car utilization.

Railroads bill shippers or receivers for demurrage for individual cars or monthly according to an average agreement. Average agreements permit customers to earn credits for cars released during the first 24 hours of free time and to incur charges for cars held beyond the free period. Credits may be offset against charges under certain conditions. The average agreements are advantageous to the railroads because they reduce the number of demurrage claims and administrative costs.

Demurrage can be increased by either increasing the daily rate or changing the chargeable days or rules for average agreements. In the last 10 years ICC has approved various permanent and temporary demurrage changes, as shown in the following table.

Date	Action
October 1971	Doubled demurrage rates from $5, $10, and $15 per chargeable day to $10, $20, and $30 per day.
October 1970/ November 1974	Issued six emergency service orders which temporarily increased demurrage charges, decreased free time, and eliminated average agreements for certain car types. These orders were in effect for periods of from 1 month to about 2 years.

May 1975 — Reduced the free time for loading from 48 to 24 hours.

April 1978 — Issued Service Order 1315, which increased the rate and chargeable days as follows:

Tariff		Service Order 1315	
Chargeable days	Rate per day	Chargeable days	Rate per day
1-4	$10	1-2	$10
5-6	20	3-4	20
7+	30	5-6	30
		7+	50

The Service Order also required that under an average agreement, two credits would be needed to offset one debit.

February 1979 — Doubled the demurrage rates established in October 1971.

ICC also found that railroads were not properly collecting all demurrage because their records were inadequate to prove the validity of some of the charges. In September 1976 ICC, therefore, prescribed new regulations governing the maintenance of demurrage records to assure effective collection.

Whenever a demurrage rate increase was proposed, the railroads argued that higher demurrage rates would cause to be released sooner and supplied data to substantiate the... position. They also argued that inflation had reduced the penalty incentive of existing demurrage rates. It became cheaper for customers to hold cars than to pay premium wages to load or unload on time. Shippers, on the other hand, argued that railroad data was faulty, they detain cars due to erratic service and "bunching" (more cars delivered to customers than can be handled at one time), and demurrage was merely a disguised revenue-producing device for railroads. ICC, while acknowledging that the railroads' data may have imperfections in some instances, has generally sided with the railroads.

ICC's main reason for increasing demurrage charges has been to secure rapid release of cars and thereby improve utilization. During the past decade, however, freight car utilization has constantly declined while demurrage collections increased from $100 million in 1969 to about $345 million in 1978.

In actual practice the impact of demurrage changes is unknown. Information on demurrage days is not routinely accumulated nationally. Therefore, there is no way to determine if increases in the dollar amount of demurrage collections resulted from an increase in the number of days cars were detained or from changes in rates and improved recordkeeping.

The only formal national study ever made on the effects of demurrage was done by Reebie Associates for FRA in 1972. The study concluded that the majority of freight cars are released within allowable free time and demurrage has little impact on customers' decisions regarding car utilization. The study also concluded that improvements in railroad linehaul and terminal operations would result in three to four times the car availability that could be achieved through demurrage changes.

ICC efforts to reduce the number of unserviceable cars

The number of unserviceable cars can also contribute to shippers' inability to obtain freight cars when needed. In December 1979 railroads reported about 98,000 cars undergoing or awaiting repair, about 8 percent of the total railroad car fleet. Whether the number of unserviceable cars is of any significance, however, is uncertain and ICC was unsuccessful in its occasional attempts to reduce the number of unserviceable cars because its authority to require repair has been severely restricted.

How significant is the number of unserviceable cars?

Unserviceable cars are commonly referred to as "bad-order cars." ICC does not accumulate its own bad-order data but relies on data developed by AAR. AAR reports monthly the number of cars taken out of revenue service for repair by each Class I railroad in its "Revenue Freight Cars in Unserviceable Condition" report. The AAR report is based on monthly submissions usually completed by each railroad's chief mechanical officer. The submissions are prepared as of a given day at the end of a month and list the number of cars awaiting or undergoing repairs at Class I railroad facilities

by railroad and by car type. The AAR computes bad-order ratios for each railroad and car type by dividing the total number of cars needing repair by the number of cars owned.

During 1973-79 freight cars reported in need of repair were generally between 8 and 9 percent of the total fleet and the ratio for particular car types was much higher. The following chart shows the industry ratios over time by various car types.

BAD-ORDER RATIOS FOR SELECTED QUARTERS

1973-79

Year	Quarter	Plain, 40ft narrow-door boxcars	All plain boxcars	Equipped boxcars	Covered hoppers	Refrigerator cars	Gondolas	Open-top hopper cars	Flat cars	All cars
1973	1	8.0	8.2	5.6	3.7	3.4	6.9	4.7	4.6	5.7
1974	2	8.9	8.8	7.3	4.1	3.7	5.5	5.5	5.4	6.2
1975	3	11.7	11.4	11.3	6.1	6.1	7.8	5.0	6.6	7.9
1976	4	11.9	12.7	11.8	6.4	6.2	10.3	6.4	6.9	8.9
1977	2	11.8	12.7	11.6	6.1	6.6	9.7	6.0	7.1	8.7
1977	4	11.5	13.2	11.1	6.1	7.0	6	6.3	7.0	8.8
1978	1	13.0	14.2	11.6	6.3	7.3	9.8	6.7	7.3	9.2
1978	2	13.6	14.6	12.1	6.4	7.7	9.6	7.0	7.4	9.4
1978	3	12.9	14.0	12.1	6.1	7.8	9.0	6.5	7.2	9.0
1978	4	11.3	12.7	11.6	5.7	7.3	8.5	5.9	6.9	8.3
1979	1	10.0	11.8	11.4	5.6	7.2	8.4	5.3	6.9	8.0
1979	2	10.2	11.8	11.3	5.9	7.5	8.1	5.1	7.2	7.9
1979	3	10.2	11.8	11.0	5.9	7.4	7.8	5.0	7.1	7.8
1979	4	10.7	11.8	10.9	6.0	7.2	8.1	5.3	6.9	7.9

AAR and ICC, however, do not know how accurately the reported data reflects actual conditions. An AAR official said AAR has not tried to determine the report's accuracy because of the considerable amount of resources such a project would require and AAR has no power to force railroads to report accurately. The Chief of ICC's Section of Rail and Pipeline Operations stated ICC has also never studied the accuracy of the bad-order car data.

Railroads, moreover, will always have some bad-order cars. Cars are removed from service because of damage or for safety reasons. Some may be removed for preventive maintenance or rebuilding to meet a customer's particular needs. The rail industry and ICC, however, have never developed an acceptable level of bad-order cars, although ICC sometimes uses 5 percent as an informal standard in actions concerning these cars.

In addition, while the preceding chart shows that the number of plain, 40-foot, narrow-door boxcars out of service has always been high in comparison to other car types, railroads consider the 40-foot, narrow-door car obsolete and generally not worth repairing. On the other hand, the ratios for covered hoppers and open-top hopper cars have remained relatively close to the informal standard of 5 percent. An AAR official also told us that the number of cars out of service includes some which will never return to revenue service because they are considered uneconomical to repair. Thus, while the percentage of bad-order cars exceeds the informal standard, there is no indication that these figures are of any significance.

ICC's authority to require car repair is severely restricted

Since 1974 ICC has attempted to reduce the number of unserviceable cars on four occasions. In July 1974, ICC requested the railroads to show cause why they should not repair all unserviceable cars in excess of 5 percent of their fleet. This was the same order in which ICC, using the annual car ownership data, attempted to have the railroads purchase additional equipment. As mentioned earlier, however, the section of the IC Act cited as authority for the order was repealed and ICC eventually took no action. (See p. 19.)

A May 31, 1978, ICC service order (Service Order 1309) required, among other things, that all cars needing light repair or cleaning be placed in an accessible position within 24 hours after they had been identified and stipulated that light repairs be accomplished within 24 hours thereafter. This order was to expire on July 31, 1978, 2 months after it

had been served. On August 7, 1978, ICC issued Service Order 1332, extending the placement time in Service Order 1309 from 24 to 60 hours. This order expired March 31, 1979.

ICC field agent checks revealed numerous violations of both orders. ICC's General Counsel, however, advised that the change from 24 hours in Service Order 1309 to 60 hours in Service Order 1332 made the 24-hour rule appear unreasonable and weakened the possibility of prosecuting the violations. After a series of split votes, the Commission canceled the order and did not prosecute.

While Service Order 1332 was in effect, ICC issued Service Order 1335 on September 7, 1978. This order required the Nation's railroads to show cause why a railroad having more than 5 percent of its plain, 40-foot boxcars in unserviceable condition should not be made to immediately institute a repair program for cars less than 35 years old with repair costs less than $5,000. ICC held that an acute shortage of plain, 40-foot boxcars existed, and this time based its authority on section 1(14)(a) of the IC Act. This provision stated:

> "The Commission may, after hearing, on a complaint or upon its own initiative without complaint, establish reasonable rules, regulations, and practices with respect to car service by common carriers by railroad subject to this part* * *."

On November 30, 1978, the Consolidated Rail Corporation filed a motion to dismiss the show-cause Service Order 1335 citing changes in the IC Act made by section 402 of the Local Rail Service Assistance Act of 1978 (Public Law 95-607, enacted Nov. 8, 1978). Section 402 provides that ICC may require railroads to provide facilities and equipment for adequate service only after it has received the petition of an interested party. Because ICC had acted on its own initiative in issuing Service Order 1335, the proceeding was terminated on January 31, 1979, 4 months after the show-cause order was issued.

Section 402 further specifies that ICC must not only receive a petition from an interested party but must also find that

> "(1) the provision of such facilities or equipment will not materially and adversely affect the ability of such carrier to otherwise provide safe and adequate transportation services;

"(ii) the expenditure required for such facilities or equipment, including a return which equals such carrier's current cost of capital, will be recovered; and

"(iii) the provision of such facilities or equipment will not impair the ability of such carrier to attract adequate capital."

One of the principal reasons advanced for high bad-order ratios is the poor financial condition of many railroads. In light of the provisions of section 402, the deteriorating financial conditions affect ICC efforts to reduce bad-order cars. The Congress, therefore, has twice restricted ICC's authority since 1974 and in the most recent instance has taken the position that ICC may regulate bad-order cars only under rather narrow circumstances.

CONCLUSIONS

ICC has instituted proceedings for both short- and long-term solutions designed to increase the size of the car fleet and improve car service through faster release and return of individual freight cars. These solutions, however, have done little to accomplish their objectives. Actions directed toward permanent improvements in freight car utilization or freight car supply have either been abandoned without results, have aggravated inefficient car utilization, or have had no effect.

ICC does not know whether its temporary car service orders help or hinder the freight car problem because the circumstances under which they are to be issued have not been clearly defined; the orders are not adequately supported; justifications for a request for an exemption are not verified; and ICC has no system to monitor and evaluate the effects of the orders.

Emergencies are bound to arise. However, ICC should clearly define the conditions under which emergency service orders will be issued. The instances which meet these conditions should be infrequent, and ICC should have documentary evidence to support the action taken. Once initiated, the order should be monitored and evaluated. The period of the order should not be extended without evidence that the emergency still exists and that the order is having the desired effect. Therefore, we believe ICC needs to develop a systematic approach to issuing, controlling, and evaluating the effects of service orders.

We also believe that an incentive is needed to prevent shippers from detaining cars too long. ICC must determine

what effect demurrage has in making shippers release freight cars faster and whether this prompt release actually results in more efficient car use by the railroads.

Finally, while reducing the number of bad-order cars could make additional cars available, the Congress has limited ICC's authority to direct railroads to repair their bad-order cars. In any case, returning bad-order cars to service will not necessarily make more cars available to shippers. The primary cause for shippers' inability to obtain freight cars is inefficient use of the cars in service, which is discussed in the next chapter.

RECOMMENDATIONS TO THE CHAIRMAN, INTERSTATE COMMERCE COMMISSION

We recommend that the Chairman prescribe specific criteria for issuing emergency car service orders and establish a system for controlling and evaluating the effects of such orders. We also recommend that the Chairman study whether demurrage encourages shippers to release cars faster and whether prompt release results in more efficient car use.

AGENCY COMMENTS AND OUR EVALUATION

FRA and AAR generally agreed with the findings presented in this chapter. AAR, however, expressed concern about our reference to the rail industry and ICC never having developed an acceptable level for bad-order cars. AAR attempts to discourage developing such a standard.

We recognized the complexity of developing a standard for bad-order cars and could not determine any benefit to be obtained from doing so since failure to comply with the standard could result in little remedial action by ICC. The Congress has severely restricted ICC's authority to require car repair and we, therefore, avoided recommending that a standard be developed. Our reference to the lack of a standard is simply a statement of fact.

ICC did not comment on our finding that its service order system needs improvement. USDA apparently favors the broad issuance of service orders since they believe the proliferation of the orders demonstrates a need. USDA also disagreed with our example of a poorly monitored service order. (See pp. 16 and 17 and app. VI.)

Service orders are supposed to be issued in emergency situations. We believe there are instances where the orders are appropriate but the circumstances under which they are to be issued should be clearly defined. In addition, we believe

ICC should establish a system to monitor and evaluate the effects of these orders, when they are appropriately issued, to assure they accomplish their purpose. In our example, the railroads had been doing as good a job before the order was issued as was accomplished with the order, and had the railroads minimally complied with the order they would have reduced their performance. We believe ICC was unaware of these circumstances because they lack a means of evaluating the orders.

In response to our draft report proposal that ICC should quickly determine what impact, if any, incentive car-hire rules have on car utilization, ICC commented that it is considering permitting railroads to set flexible per diem levels and that proposed legislation may eliminate ICC's incentive per diem authority. The flexible per diem concept appears to offer promise for reducing empty car miles. Subsequent to commenting on our draft report, ICC granted the railroads flexibility in setting per diem rates and eliminated incentive per diem charges.

Both ICC and USDA commented on our findings concerning demurrage charges, but apparently with diametrically opposed views. ICC told us that in a 1971 proceeding to increase demurrage charges it was determined that increased demurrage reduced the time shippers used in loading and unloading cars. USDA believes current demurrage charges are extremely high and do not improve freight car utilization.

The comments illustrate the conflict. The railroads submitted studies for the 1971 proceeding which concluded that increasing demurrage does decrease the time cars are held by customers. Shippers, however, questioned the reliability of the studies and although ICC approved the demurrage increase, it admitted the railroads' studies had imperfections. The only national study, done by Reebie Associates for FRA in 1972, concluded that demurrage charges have little impact on freight car utilization. Moreover, even if shippers were to release cars sooner as a result of demurrage charges, ICC does not know if the railroads actually would put these cars to efficient use. USDA in its comments alleges the railroads do not. We believe, therefore, that the effects of demurrage on freight car utilization is subject to question and to resolve this controversy ICC should determine whether demurrage does, in fact, improve overall freight car utilization.

CHAPTER 4

ACTIONS NEEDED TO BETTER MEET FREIGHT CAR DEMAND

Any resolution to shipper complaints that they cannot obtain freight cars when needed may have to come from a source other than ICC or FRA. There is some question whether ICC has the authority to provide realistic solutions to the problem. FRA sponsors research and demonstration projects to identify areas of potential improvement in freight car handling and administers Federal financial assistance but it has no power to require installation of any improvement by the railroads. The primary cause of shippers' inability to obtain cars on demand, inefficient utilization of the car fleet, may have to be solved by the railroads. In addition to improving utilization, economic incentives could be used to control the demand for freight cars. The Staggers Rail Act of 1980 permits greater freedom to adjust rates to demand which may supplement improved utilization.

The basic cause for shippers' inability to obtain freight cars during periods of high demand is technological; existing cars are not used efficiently. The average freight car moved only about 60 miles a day in 1978. The average length of a car cycle was about 26 days, broken down as

--3 days in the shipper's hands,

--2 days moving loaded,

--3 days in the receiver's hands,

--2 days moving empty, and

--16 days in railroad yards and terminals.

Railroads not only move freight cars very slowly, they also frequently move them erratically. Customers complain about their inability to secure cars and about the continuing decline in regular delivery of loaded cars.

Substantial improvements in car utilization will not come about immediately but only after the railroads identify and eliminate bottlenecks to efficient car movement on each railroad and adopt methods for efficient, nationwide distribution of freight cars. DOT, through FRA, has sponsored demonstration projects which indicate that management information systems, controlling car movement from origin to destination,

can enable the railroads to get better utilization out of their freight cars. One Canadian railroad which has implemented a similar system has reduced its average online car cycle by about 4 days, or 25 percent. However, while the practical application of improved management information systems has been demonstrated, adoption of such systems is up to railroad management and the costs involved may be more than some railroads are willing to spend. The Staggers Rail Act of 1980 authorizes that Federal funds available to assist railroads can be used for computerized car management systems but these funds may not be available to all railroads interested in such systems.

Improved management information systems and car distribution methods can greatly increase the car supply. However, railroads will probably still be unable to satisfy the demand for cars at all times. Maintaining enough cars to serve any possible demand would be economically inefficient. An economic incentive could be used to defer or transfer the railroads' peak demand to supplement improved utilization. A means of accomplishing this objective would be to permit railroads to adjust freight rates based on demand, forcing shippers to consider the economic impact of transportation charges and possibly defer the demand to nonpeak periods. The Staggers Act permits greater pricing freedom but it is too early to evaluate this legislation's impact.

TECHNOLOGICAL SOLUTIONS

The principal bottleneck to efficient freight car utilization--- yards and terminals

The railroads know, in general, that the principal bottleneck in their operation is in yards and terminals where freight cars spend about 60 percent of their time. ICC efforts to eliminate the bottleneck have been limited to somewhat ineffective short-term solutions and there is some question whether it has the authority to effect more permanent solutions. FRA research on yard and terminal operations, while demonstrating that improvements can be achieved, is strictly informational.

Freight cars usually move as single cars or in groups shorter than a trainload, known as blocks. They are more or less randomly received and assembled into trains going in the general direction of the cars' destinations. Along the way the cars may have to be disassembled in yards for transfer to other trains, other railroads, or customers. In 1977 there were over 4,100 yards in the United States, about 1,200

used for classification of freight cars and the remaining 2,900 primarily industrial yards.

Railroad yards serve a dynamic purpose--to process cars toward their destinations. Cars are sorted, inspected, cleaned, repaired, and weighed; locomotives and cabooses are serviced; and administrative operations, such as handling yard information and paperwork, are carried out. The yard facilities must also be maintained and repaired.

All these activities, plus outside forces, such as length of trains arriving and departing, timing of train arrivals and departures, labor agreements, and operating standards of connecting railroads, create a web of interrelated activities which directly affect the speed with which cars pass through a yard. It is this processing that uses so much time between one load and the next in the car cycle. Sixteen days of the 26-day average cycle are attributable to time in yards and terminals. Each time a car moves through a yard, the chances are greatly increased that it will be delayed and not reach its destination within expected time limits.

ICC and FRA have been taking actions which attempt to speed freight cars through yards. As mentioned in chapter 3, ICC issued two emergency service orders in May and August 1978 requiring that freight cars be forwarded within limited time periods. ICC investigations found thousands of violations by various railroads and assessed $7 million in fines. However, none were ever collected because of a conflict within ICC over the possibility of successfully prosecuting the the railroads.

In June 1978, as part of a lengthy investigation of freight service, ICC proposed that permanent terminal operations performance standards be established. These standards, similar to the service orders which required car movement within specified periods of time, were again directed toward movement of individual cars through yards. However, an ICC official told us that because of a 1979 court case, terminal performance standards will not be implemented. In that decision, the Seventh Circuit Court of Appeals prohibited ICC from requiring the railroads to issue intercity performance standards in tariff form. The ICC official told us that to be enforceable standards must be published in tariff form. Since ICC believes the court ruling equally applies to terminal standards, they will not be implemented.

While ICC has attempted to directly impose operating standards on yards and terminals, FRA has indirectly attempted to improve car utilization by publishing the results

of its research and acting as an intermediary in helping railroads get started on their own yard and terminal projects. These efforts, while also attempting to move individual cars faster, are directed toward changes in yard and terminal systems. FRA-sponsored work includes

--task forces of local labor and management committees to study changes in local operations to improve car utilization,

--contracting for studies of yard and terminal restructuring to eliminate or relocate yards or specific bottlenecks in transferring cars between railroads, and

--funding theoretical studies of classification yard technology.

An example of the task force effort is the St. Louis terminal project in which one major railroad's terminal operations on both sides of the Mississippi River were selected to experiment with new operating practices. As a result of the experiments, the average time a car spent in the railroad's terminal was reduced about 4 hours, or 25 percent.

In 1977 the St. Louis project was enlarged to include the 14 linehaul railroads and the 3 switching railroads in the St. Louis area. FRA is now sponsoring similar terminal studies in Buffalo, New York; Chicago, Illinois; Portland, Oregon; and Houston, Texas. FRA is supporting the development of a plan to restructure the complex of yards and terminals on both sides of the Mississippi River at St. Louis involving about 60 yards of the 17 railroads. However, current bankruptcy reorganizations, proposed mergers, and proposed restructuring of Midwest railroads will all affect the restructuring at the St. Louis terminals.

There is no question that time spent in yards and terminals is the largest factor contributing to the poor state of freight car utilization in the United States. If time in yards and terminals of all railroads was reduced 25 percent, railroads would reduce the average time in yards from 16 to 12 days and the overall car cycle from 26 to 22 days. This would be the equivalent of over 200,000 additional freight cars in the Nation's fleet.

Need for greater efficiency in distributing freight cars

Car distribution is the process of providing destinations to empty cars and monitoring their movements toward

those destinations. It involves three distinct levels of activity:

--Distributing cars nationally among the railroads to assure that originating railroads can provide cars to their customers.

--Distributing cars within a particular railroad or railroad system to assure a supply for overall customer demand.

--Distributing or allocating cars to individual customers from the railroad's overall supply.

Substantial progress has been made in the efficient distribution of empty cars within particular railroad systems through computerization. However, Federal regulatory efforts at national distribution have contributed to the inefficient use of cars. In addition, railroad management exercises little formal control over distribution at the local level.

Freight car distribution among railroads

As discussed in chapter 3, ICC attempted to promote better national car distribution through its car service and car-hire rules and service orders. These rules and orders required prompt release and return of cars by terminating railroads, but the objective seems to have been accomplished at the expense of efficient car utilization. The joint FRA-AAR Freight Car Utilization Research-Demonstration Program, however, has proposed a system which will improve freight car utilization through better national distribution.

The FCUP proposal stipulates that a national car distribution system should meet three objectives: provide cars to meet loading demand for each railroad, improve utilization, and provide an adequate return on investment to the owning railroad companies. The system would operate in a manner similar to the Clearinghouse, used now by several railroads to balance the flow of several types of cars at the lowest empty car mileage.

The first objective, providing cars to meet loading demand for each railroad, would be met by

--permitting cars to be loaded in any direction,

--establishing a centrally managed balancing mechanism to direct cars to railroads whose online car inventory is expected to drop below an agreed-upon level,

--establishing a penalty for failure to comply with balancing directives, and

--establishing a grading system to ensure that railroads would be furnished cars of comparable quality to the cars it owns.

The second objective is to improve utilization. The balancing mechanism is intended to ensure that railroads which originate substantial traffic are supplied with empty cars, and that the empty cars are moved in the most efficient manner. Empty car mileage would be reduced by having the railroads transfer only the "net" balances owed the system and by permitting each railroad to decide which cars are to be moved. This would allow each railroad to select those freight cars which would cost the least to deliver--normally those closest to the receiving railroad requiring the least amount of switching.

The proposed system also intends to eliminate much unnecessary empty car movement in times of car surplus by obliging carowners to bear the burden of general car surpluses in proportion to their claim on cars from the pool during periods of peak demand. This would halt the procedure of sending foreign empty cars to their home railroad. It would also make railroads careful about acquiring so many cars as to always have a surplus.

The final objective is to provide the owning railroads with an adequate return on their investment in freight cars. The plan defines adequate return as that which equals or exceeds the owner's weighted average cost of new capital to enable purchase of cars to continue over the long term. The plan proposes that the owning railroad would receive an adequate return through

--income from loading its own cars,

--adequate per diem, car-hire rates for operation of the car on foreign roads, and

--car penalties to be paid by a debtor railroad when it fails to deliver cars in accordance with balancing directives.

The penalty would be periodically adjusted to help compensate carowners for the opportunity cost of not having the use of their cars or equivalent other cars and would induce quick delivery to beneficiary roads. Penalty levels would also vary with the demand for cars by shippers. Of course, substantially all of the Nation's major railroads will have to be members if this system is to work.

To supplement a national car distribution system, ICC also favors establishing a market mechanism for allocating freight cars. Under this plan, each railroad, entitled to a certain number of cars as determined by an agreed-upon formula, periodically reports the number of cars online thus identifying those railroads in excess or deficit positions. A railroad needing freight cars could then purchase the rights to another railroad's excess cars.

Individual railroad freight car distribution

Distribution of cars among the railroads is only a portion of the whole process. Within an individual railroad or railroad system, there must be a system of balancing supply and demand for empty cars at the points on the railroads where inventories of cars are maintained, and there must be a means to assure that individual customers may obtain cars when they want them.

Distribution within the railroads--Many of the railroads have fairly sophisticated systems for distributing cars among their regions, divisions, and inventory points. Computers determine projected unfilled orders or surpluses, match unfilled orders and surpluses, and ensure movement of empty cars to proper destinations. These systems are widely used and appear to operate fairly well.

Distribution to the shipper--The process of distributing cars to shippers, particulary allocating cars in times of high demand, is much less certain. The IC Act requires that the railroads by law may not discriminate among customers in providing transportation services. Every customer is entitled to a share of available equipment. However, the entitlement and the methods for determining it are not specified in the IC Act, except for coal mines. ICC has never fully determined what constitutes equitable distribution. Many shippers, therefore, especially the small-volume ones, allege that they do not receive an equitable share of the cars during periods of high demand and are being discriminated against.

In 1973 ICC dealt with car distribution to customers in connection with an investigation into the possibility that control of railroad rolling stock was used to depress prices on export grain shipments. The investigation did uncover some specific instances of unfair and inequitable car distribution. Under some tariffs consignees rather than railroads were allowed to designate the next loading point for railroad-owned equipment. ICC's Bureau of Enforcement recommended adopting a uniform set of regulations to govern

grain-car distribution. The Bureau pointed out that rules for grain-car distribution were needed because the railroads generally did not have any discernable rules, principles, or priorities governing the allocation of grain cars among classes of grain shippers in times of high demand. Without such programs, ICC has no basis for enforcing fair and equitable distribution.

The Commissioners rejected this approach, concluding that freight car distribution was largely a local responsibility or, at a minimum, a regional responsibility and that car distribution plans had to be flexible to be responsive to shipper needs.

Railroads currently do not have formal plans for distributing cars to all their customers. They do have plans of sorts, but these are mostly unwritten. Each railroad's car distributors, especially the local distributors who assign cars to the shippers, have the plans "in their heads" and distribute available cars based on their sense of "equity," as required under the IC Act, and their general knowledge of shippers' capacity to load cars.

However, requiring railroads to provide an equitable share of freight cars to every shipper requesting them can cause less efficient use of the available fleet. This happened in February 1978 when ICC limited the number of jumbo covered hopper cars that could be used in unit-grain train service in order to divert them to small grain dealers. Unit trains are an efficient means of transporting large volumes of a commodity because they are organized and operated as a unit from a single point of origin to one destination. Normally, freight cars are added to or deleted from trains at various points along a route. Railroads and shippers alike denounced ICC's action, maintaining this restriction resulted in inefficient use of freight cars. ICC acknowledged that its action reduced car utilization in the interest of equity.

A modern management system is needed to control the fleet to better meet freight car demand

Railroads realize that unnecessary empty car miles should be avoided and that empty cars directed to shippers must not be diverted to others. Substantial efforts are devoted to seeing that the empty car gets to the shipper to whom it has been assigned but, as customer complaints of irregular rail service seem to indicate, less special effort seems to be devoted to moving loaded cars. The long-car

cycle, 26 days in 1978, and the low-average mileage, 60 miles a day, indicate that the traditional surveillance of management is not effective in securing good overall car utilization.

Customers are as interested in receiving their loaded cars on a regular schedule as they are in getting the empty cars to load. Recently, the third largest shipper in the United States became extremely concerned with the decline in its service reliability. It invited the chief operating officers of all the railroads with which it did business to a conference to discuss the question. This shipper found ontime delivery of its shipments had declined to only about 66 percent, an intolerable percentage for its business. Another large shipper measured ontime performance for about a 12-year period. The standard used was a specific arrival date, plus or minus 1 day, a 72-hour period; hardly a rigorous standard. Yet only 65 to 72 percent of the carloads arrived within this target period. Nearly all of those which did not meet the target arrived late.

What seems to be needed is a system which controls car movement from origin to destination and from which the railroads can determine whether service reliability to the customer is being achieved.

Large quantities of freight car data are being processed now on AAR's Telerail Automated Information Network, second generation (TRAIN II) system. One purpose of this system is to permit AAR to make short-range projections of car needs and availability throughout the country and provide the information on which it can take action to lessen the severity of unfilled freight car orders. Twenty-seven railroads report daily eight events in the car movement cycle for about 2.5 million cars, containers, and trailers on their rail systems. 1/ From this raw data, the system compiles information for AAR, individual railroads, and shippers. All TRAIN II can really do, however, is function as an enormous car locator system. It can tell where cars were when the data was reported, but has no capability to tell where each car ought to be.

1/TRAIN II only receives data from the larger railroads that have the computer capacity to collect and transfer the data. Cars on short-line and switching and terminal railroads generally are not included. For these, the Railroad Operations Modular Processing System, a system similar to a service bureau, is being developed.

In 1975 the United States Railway Association dealt with the problems of service regularity as a means of bringing the proposed Consolidated Rail Corporation into profitable operation. To achieve profitability, the Association noted that a computerized operating control system would be required. The system would continuously monitor car movements, predict needs for empty cars as well as the location and quantity of empties being generated from loads, automatically fill some orders, and assign destinations for some empties. This system would use a car distribution strategy involving centralized control of the various steps of car distribution except for local matching of individual cars to local car orders. It was emphasized that extremely accurate and complete "real time" 1/ car flow data is required for such a system.

Subsequent developments in information systems on railroads enlarge the concept of modern car control to include all empties as well as all loads. No railroad in the United States has such a system in full operation, but one railroad, under a grant from FRA, is developing such a system. This railroad already has a sophisticated computer management system upon which the proposed system can be built.

Among the functions to be added to the system under the FRA grant is the "scheduling" of individual freight car movements. The key element of scheduling will be a trip plan, a schedule of a car from origin to destination on the railroad. The plan will include the moves for the cars at specific yards, on specific trains, and the block of cars within the train on which the car is to move from origin to destination. This car schedule is actually a set of standards governing movement of the car, against which actual movement of the car can be compared. The system is also specifically directed toward efficient distribution of cars. It will assist in the assignment of destinations for empty cars and permit spreading the car supply equitably across customer demand on a systemwide basis rather than solely on the availability of cars in a local geographical area.

1/Real time is a term used in the computer field. It refers to a system in which the processing of data input occurs virtually simultaneously with the event generating the data.

The railroad is now using the computer to expedite the movement of cars to other railroads by transferring waybill data and the advance train lists direct to connecting railroads' computers. The existing computer system is handling all this information on a railroad which usually handles 96,000 freight cars a day, over 12,000 track miles, in more than 800 trains, to and from 124 stations or terminals having over 100,000 customer facilities.

A car control system, whether of the car scheduling type being developed under the FRA grant or some other type, can improve the movement and handling of cars because standards for each car movement are established and actual movements are continually monitored against them and refined. The effect on the railroads should be reduced costs through improved utilization. More carloads can be handled for the same number or fewer car days; that is, the car cycle can be reduced.

Regarding the shippers on the railroad, such a system would enable them and the railroad to better control car orders and to locate available cars faster than existing systems, to automatically generate some of the paperwork necessary on freight shipments, and to provide quick answers to inquiries about car locations on the railroad.

Better control of cars on the railroad can also save the shipper money. One large shipper estimated in 1976 that it could save more than $1.6 million annually through reliable service and better car utilization. More than $1.4 million was attributed to reliability: reduction in inventory carrying costs, distribution center space costs, and premium (truck) transportation costs. An additional $200,000 in potential savings was attributed to speed: reduced receivable collection time and inventory carrying costs. All these savings were achievable with only a consistent 1-day reduction in transit time.

If consistency in movement is achieved, customers will also be able to plan better for their unloading operations. This should reduce the amount of time the cars need to be in the customers' control.

To make a car control system workable, all the railroads would have to exchange the necessary car flow information with each other, which would require a set of standards for the data interchange. Without such data interchange, customers whose cars move over more than one railroad would not know the schedule of cars from origin to destination and would not be able to plan for handling of the cars.

At least 15 railroads have recently begun communicating waybill data electronically with one another. They account for 67 percent of all Class I railroad interline-originated loads. The standards governing the exchange of data were established by the Transportation Data Coordinating Committee, a joint industry/government activity sponsored by DOT. This exchange represents a start toward the cooperation which will be needed for an advanced management information system to control car movements.

We believe the need for improved car utilization and service reliability has been established. Possible technological solutions to the problem have been demonstrated. However, while railroads are large users of computers, their systems have not been developed in unison with one another, have varied functions for each railroad, and have support systems of varying adequacy for car scheduling. Also, the quality of data within each system varies widely. It is now up to the railroads to adopt the management systems which will use the technology and to cooperate to achieve the maximum benefits from the data which will have to be shared among the railroads.

There is a possible additional problem: the costs involved in implementing or changing their systems may be more than some railroads will be willing or able to pay. The Congress has recognized the potential benefits of a modern computerized management information system, and section 405(e) of the recently approved Staggers Rail Act of 1980 permits railroads to use some of the $1 billion authorized under title V of the Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act) to update or install car-locating computer systems. This financial assistance, however, is only in the form of loan guarantees or preference share financing and is probably not much of an inducement for the profitable railroads that must participate in any coordinated car control system. Furthermore, the funds are available for many other purposes and, as we reported, 1/ FRA has been reluctant to try to influence the railroads through the assistance programs in the past. Therefore, it seems unlikely the extension of title V assistance to car control systems will have much effect.

1/"Federal Assistance to Rehabilitate Railroads Should Be Reassessed," (CED-80-90, June 27, 1980).

AN ECONOMIC SOLUTION--
PRICING FREEDOM

Until passage of the Staggers Rail Act of 1980, the railroad industry was completely regulated by ICC. As part of its authority, ICC was responsible for deciding whether the rates which railroads charged were too high, too low, or discriminatory. Until recently, ICC also had to consider whether rates might affect the "inherent advantages" of the competing modes and interpreted this responsibility to mean that the rates of one mode (nearly always railroads) had to be set to protect the traffic of the other modes. Therefore, railroad rates were generally maintained at fixed levels regardless of variations in the demand for transportation.

Much of the truck and barge traffic, however, is free from regulation. Not only have truck and barge rates been protected from railroad rates which would attract their traffic, but much of their traffic is entirely exempt from rate regulation. Thus, during periods of high demand, trucks and barge lines are free to raise their rates immediately to whatever level the traffic will bear and to offer to carry only to the capacity of their facilities. The railroads, on the other hand, being wholly regulated, were not able to raise their rates on short notice. Shippers then turned to the railroads as the carriers of last resort, and the railroads had to attempt to carry any amount of freight tendered at the rates in their tariffs. The railroads inevitably could not supply all the cars needed at the times demanded and so suffered the wrath of shippers, government, and the public at large.

Were the railroads free to adjust their rates as widely and on as short a notice as the trucks and barges, they could smooth out the demand for freight cars to more nearly equal their capacity to supply them. Ordinary shippers would be forced to consider the economic factors of higher transportation rates during periods of high demand versus somewhat lower prices with lower transportation costs during periods of low demand.

The Congress has enacted laws to more nearly equalize regulation of railroads with trucks and barges to permit railroads to compete more effectively. The 4R Act, for example, changed the standards ICC was to apply in determining the reasonableness of proposed rates to permit limited rate freedom. DOT and the railroads alleged, however, that full implementation of the 4R Act had been hindered by ICC's conservative interpretation of its provisions. DOT believed the

4R Act, even if fully implemented, only provided a basis for modern regulation. At the same time, railroads had been hesitant to use the limited rate freedom they had because they had little experience in determining what level of rate to charge on what commodities.

The Staggers Rail Act of 1980 now assures railroads substantially more rate freedom than was afforded under prior laws. It substantially eliminates rate regulation of railroads where there is effective competition for transportation service. The act also encourages more effective marketing by railroads by lowering the notice period for rate changes. While rate freedom probably will not eliminate unfilled car orders if shippers are willing to pay more and demand timely movement, unfilled orders could be reduced to the extent that demand for freight cars is depressed by rate freedom.

CONCLUSIONS

Better utilization of the freight car fleet would substantially reduce shippers' inability to obtain freight cars when needed. Substantial improvement in regularity of service to the customer is also needed. However, ICC has done little and apparently can do little to alleviate the problems of inordinate delays in the industry's principal bottleneck--yards and terminals. There is also no systematic approach to efficient distribution of cars on a national or local level.

FRA-sponsored studies are informative and appear to offer solutions. What is needed to improve utilization, distribution among railroads and customers, and overall quality of service is a system of free-flowing cars and better information control over the freight car fleet than now occurs. One method believed to be effective is installation and use of a management information system which can plan and control freight car movement, identify each element of the car cycle, and establish standard origin-to-destination transit times for each freight car. The railroads themselves must do this. Federal agencies can provide help in developing the technology which the systems will use and financial aid, where necessary, to install such systems.

However, operational improvements alone will not solve the inability of shippers to obtain freight cars on demand. Supplementing improved utilization, railroads may be able to use greater pricing freedom to defer demand for cars. In the abstract, complete pricing freedom could provide the quickest solution to the problem of the railroads' inability to supply all the freight cars demanded. In theory, an increase in freight rates during high demand would defer

shipments to a later period or transfer them to other modes. Economic regulatory reform, however, is not a simple matter. It is complicated by the rail industry's potential market power in certain geographic and industrial areas and the desire of the Federal Government to use economic regulation as an instrument of social policy. Thus, while current legislation permits greater pricing freedom, it does not allow for complete freedom. Some rate regulation has been retained.

RECOMMENDATION TO THE CHAIRMAN, INTERSTATE COMMERCE COMMISSION

We recommend that the Chairman work with the Administrator, FRA, and the railroad industry to develop the technology and cooperation needed to implement a compatible management information system for better freight car utilization.

RECOMMENDATION TO THE SECRETARY OF TRANSPORTATION

We recommend that the Secretary direct the Administrator, FRA, to continue to develop and demonstrate improved railroad car management and control methods that could be used in a compatible nationwide system, and to use available assistance programs to encourage railroads to install and use such systems.

FURTHER ALTERNATIVES FOR THE CONGRESS

Recent congressional actions should alter railroad pricing and operations and as these changes take place, the problems discussed in this report may be alleviated. If they are not, the Congress has other options. It could provide more direct financial assistance to encourage railroads to make needed improvements and/or permit greater pricing freedom. These alternatives should be considered if the Congress concludes that railroads are not providing adequate service after the changes permitted by the Staggers Act are in place.

AGENCY COMMENTS AND OUR EVALUATION

FRA agreed that the development and installation of a nationwide management information system recommended in the report would improve service reliability. ICC did not comment specifically on a management information system but pointed out recent actions it has directed toward improving freight car utilization. These included changes in per diem

charges and rescinding mandatory car service rules in an effort to reduce empty car miles. AAR objected to a perceived implication in our report that the Train II computer system should be able to control car movement. The report also discusses the lack of formal control over car distribution at the local level but AAR believes such control is adequate.

ICC in various proceedings on freight car distribution concluded that the railroads do not have formal plans for allocating cars at the local level. What plans are available are "in the heads" of the local car distributor. Shippers, therefore, allege that they are not treated equitably. Equity versus efficiency has long been a subject of controversy. We believe that improving the existing fleet's utilization will make more cars available and that a nationwide management information system, discussed in chapter 4, would help to resolve the problem. We also recognize that capability greater than is available through Train II will be required for such a system. However, we acknowledge that Train II, due in part to the waybill interchange program and adoption of uniform standards governing the exchange of the data, is a step in the right direction.

USDA's comments provided data that required some technical corrections to our report. These corrections were made. However, USDA characterized as simplistic our finding that the railroads need to improve utilization of the existing fleet. It also maintains there are indications that pricing freedom will not significantly alter the demand for freight cars. Its comments deal exclusively with grain-carrying cars and address very briefly some actions, such as upgrading the rights-of-way, which may decrease the shippers' inability to obtain cars when needed.

However, USDA's comments included several pertinent facts supporting our contention that the fleet is poorly utilized. USDA points out that the utilization of covered hopper cars declined from 17.6 trips per year in 1972 to 13.5 trips per year as of June 1980. If the 1972 productivity level had been maintained, an additional 230,000 carloads of grain could have been loaded in 1978. This figure is a close approximation to the data presented in our report showing that a 25-percent improvement in the time freight cars spend in yards and terminals is equivalent to 200,000 additional cars. USDA also stated that one of its own studies showed that if railroads improved performance they could significantly reduce the need for additional grain-carrying cars to meet the expected increased demand by the year 2000.

In addition to pointing out that the freight car fleet is not used efficiently, we go one step further and recommend that the rail industry put aside its provincial attitudes and adopt a nationwide management information system to control car movement. Adding more cars will not reduce unfilled orders if the available cars cannot be moved expeditiously. We believe possible technological solutions to the problem have been demonstrated in FCUP studies and through the FRA contract. Our position remains that the railroads can and must improve the existing fleet's utilization.

USDA bases its pricing freedom position on a recent North Dakota State University study performed under a USDA contract. This study involved seasonal railroad rates for grain movements in North Dakota during 1967-74. USDA also raised a question whether grain movements even have peaks and supplied a chart of grain carloadings for a 3-year period.

We believe USDA's statistical data on grain carloadings actually shows that peak periods do exist. This data shows a range of average weekly grain carloadings from a low of about 20,000 to just below 30,000 cars in 1978 and to more than 30,000 cars in 1979. This is a spread of about 10,000 loadings during different periods of a year. Moreover, this data only shows loadings, it does not account for total demand, that is, it excludes the cars requested but not supplied.

At the time USDA's comments were received, the North Dakota State University study was in draft form. It is limited to one commodity in one State. Our report addresses national rail transportation, and therefore we believe that additional work would be needed to apply the conclusions of the North Dakota study to all rail transportation. Moreover, the Rural Transportation Advisory Task Force, cochaired by the Secretaries of Agriculture and Transportation, generally supported increasing rail pricing flexibility.

APPENDIX I

DAN GLICKMAN
FOURTH DISTRICT—KANSAS

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CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
WASHINGTON, D.C. 20515

July 11, 1978

Honorable Elmer Staats
Comptroller General of the
United States
General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Comptroller Staats:

I am deeply concerned over the severe shortage of rail equipment, most notably boxcars, for movement of grain and other agricultural products and its impact on our nation's farm economy. Many rural elevators in my state of Kansas and elsewhere have been forced to store grain on the ground for lack of facilities caused by the rail equipment shortage. If there is a heavy rain in these areas, much of the grain will be lost. Farmers cannot sustain further devastating losses when they are already financially hardpressed.

In light of the severity of this problem, I am concerned that the federal government might not have taken all appropriate steps to alleviate the shortages. Likewise, I am concerned that Interstate Commerce Commission regulations and route structures might in fact be exacerbating the problem. Clearly, we should not sit idly by if either of those is in fact the case.

For example, one point that has been brought to my attention recently is that boxcars and covered hoppers which are brought to rail yards for repairs often remain there far too long. It has been suggested that this is such a common situation that it is in fact one of the contributing factors to the current shortage. I am aware that several ICC service orders have been put in force to help alleviate this problem, but I am not convinced that the actions have been sufficiently comprehensive. Stronger action might be in order.

In recent years, shortages of rail equipment at harvest time have become the norm. I am convinced that we need to do something to avert future such shortages. Therefore, I request that the General Accounting Office undertake a thorough investigation of the rail equipment shortages which have occurred in recent years and the government response to those

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APPENDIX I

shortages and submit a report outlining recommendations for needed legislative and administrative changes to avert future shortfalls.

With best regards,

Dan Glickman

DG:sf

APPENDIX II

Interstate Commerce Commission
Washington, D.C. 20423

OFFICE OF THE CHAIRMAN

June 25, 1980

Henry Eschwege, Director
Community and Economic Development Division
USGAO
Washington, DC 20548

Dear Mr. Eschwege:

I have reviewed with interest your draft report entitled "There is No Shortage of Freight Cars -- Railroads Must Make Better Use of What They Have." I think the basic conclusion of the report, expressed in its title, is sound. However, I offer some comments and enclose some materials that may be of use to you in preparing a final draft.

[See GAO note]

p. 11. The table would be improved by addition of a line showing the increase over time in revenue ton miles per car per year.

[GAO Comment: This suggestion was incorporated on page 11.]

p. 22. This might be a good point to take note of a major initiative in the car hire area recently undertaken by the ICC in our proceeding Ex Parte 334 (Sub. No. 4). In this proceeding, the Commission proposes to allow railroads to cut car hire charges below the established basic per diem or incentive per diem levels during the present car surplus. The attached show cause order presents additional explanation. A final order in this case should be issued in time for your report to take note of it.

[GAO Comment: We discuss flexible car-hire rates and incentive per diem on pages 22, 23, and 32.]

p. 31. Your recommendations here are essentially sound. For your information, the two proceedings you refer to are now in an advanced state. A decision in Ex Parte 241 (Sub. No. 1), which deals with mandatory car service rules, should be served by mid July. Public comments have been received and analyzed in Ex Parte 252 (Sub. No. 5), which deals with incentive per diem. However, legislation may take care of this matter soon rendering ICC action unnecessary.

[GAO Comment: Subsequent to sending our draft report for comment, ICC completed its proceeding on mandatory car service rules. This fact was included on page 22, and a proposal on this subject included in the draft was deleted from the final report. We discuss the subject of incentive per diem on pages 22 and 23.]

APPENDIX II

p. 33. I believe it would be more accurate to say, in the second paragraph on this page, that the basic cause of poor freight car utilization is institutional rather than technological. Also, this chapter fails to mention one of the major institutional options for improving freight car utilization, namely, the establishment of a market mechanism for distributing freight cars among roads. Such a proposal is advanced briefly in the ARR Task Force 4 report. The enclosed ICC staff memo on the topic elaborates on the concept of a freight car market.

[GAO Comment: We discuss technological problems of freight car utilization and believe that freight cars spend an excessive amount of time in yards and terminals. What is needed to speed all aspects of freight car movement is a management information system for car scheduling, a technological improvement. We do make reference to an institutional aspect of the problem when we discuss the rail industry's parochialism in the development of computer capability on pages 43 and 44.

We discuss the freight car market concept on pages 38 and 39.]

p. 45. Your section on pricing freedom might be strengthened by reference to recent ICC initiatives in this area. For your information, I am attaching a copy of the Notice of Proposed Rulemaking in Ex Parte 324, which would increase railroads' freedom to establish demand sensitive rates.

[GAO Comment: We were aware of the Notice of Proposed Rulemaking. However, subsequent to receiving ICC's comments, an ICC official told us the proposal was being terminated because section 209 of the Staggers Rail Act of 1980 abolishes ICC's authority to set standards and procedures for demand sensitive rates.]

If I can be of any additional help to you, please let me know. I would be happy to talk to you or your staff about any aspect of the car service problem. Your staff also might find it useful to review some of the voluminous public comment that has been received in the many ongoing ICC proceedings relating to car service matters. Additional comments on your draft report are being prepared by other ICC bureaus and offices, and will be forwarded to you as soon as they have been reviewed.

Yours truly,

Edwin G. Dolan
Assistant to the Chairman

GAO note: Page references have been changed to correspond to the final report.

APPENDIX III

Interstate Commerce Commission
Washington, D.C. 20423

OFFICE OF POLICY AND ANALYSIS

July 21, 1980

Henry Eschwege
Director
Community and Economic Development
Division
U. S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

We appreciate the opportunity to comment on the draft of your report to Congress addressing the shortage of freight cars and freight car utilization. These problems continue to be of great concern to the Commission and we welcome the insights you have brought to them.

In general, we concur with the principal findings of the report. We particularly agree with the conclusions that freight car shortages are largely attributable to inefficient car utilization and that improving car utilization is a problem that should be primarily resolved by the railroad industry. We are, however, making a considerable effort to work with and encourage the industry to take the necessary action.

The one general complaint we have with the report is that it places too much emphasis on a technological solution to what we believe is a pricing problem. The railroads are not using freight cars efficiently largely because they are not being provided with the appropriate incentives. These can only be developed through a market based car allocation system. Whereas such a system would benefit from, if not require, improved technology and car management information systems, these alone will not induce an improvement in freight car utilization.

[GAO Comment: We discuss in detail technological problems of freight car utilization because we believe freight cars spend an excessive amount of time in yards and terminals. What is needed to speed all aspects of freight car movement is a management information system for car scheduling, and we believe that possible technological solutions to the problem, as discussed in chapter 4, have been demonstrated.

APPENDIX III

Pricing freedom is suggested as an economic solution to supplement technological improvements. In theory, higher rates during high demand would defer shipments to later periods or other transportation modes. However, little evidence of pricing freedom's actual results exists. We also note in our report on page 46 that the railroads have been hesitant to use the limited rate freedom they have. Moreover, the market based car allocation system, informally supported by ICC, has also not been formally endorsed or tested.]

Aside from this general observation, we have several comments on certain specific portions of the report.

See GAO note]

1. If the data on unfilled car orders on page 10 were broken down on a monthly and regional basis, a more accurate picture of the car shortage might emerge. The conclusion that the Nation suffers no more than a 4-percent overall shortage of the serviceable freight car fleet is an overgeneralization that masks serious shortages at some times and places, as well as car surpluses.

Further, comparing daily shortages with fleet size, while frequently done, may be misleading since daily unfilled orders is a flow measure and fleet size is a stock measure. The problems are further exacerbated by a generally acknowledged pattern of shippers ordering more cars than they actually want. To get a more meaningful comparison, one should first multiply daily unfilled orders by the car cycle time. One would then obtain an estimate of the additional fleet required to eliminate shortages, which can be properly compared with total fleet size.

[GAO Comment: We discuss an expanded presentation of unfilled car orders and a revised mathematical computation of daily shortages on page 12. While not shown statistically, we do make reference to the cyclical and geographical nature of unfilled orders and discuss particular car types in our report. The data on page 10 is presented in the accepted manner. Calculations of unfilled car orders are distorted by including the car cycle.]

2. The mandatory car service rules have been in effect for 8 years (not 10) as stated at page 20 of the text.

[GAO Comment: We have corrected our final report.]

3. The report overlooks changes since 1969 which provide a background to support the recision of the mandatory car service rules. For instance,

there is no reference to Ex Parte No. 334, Car Service-Basic Per Diem Charge, 361 I.C.C. 119 (1979), in which the Commission prescribed basic per diem charges for fifteen different car types in accordance with section 212 of the Railroad Revitalization and Regulatory Reform Act of 1976.

[GAO Comment: Subsequent to requesting comments on our draft report, ICC completed its proceeding on mandatory car service rules. This fact was reflected on page 22, and a proposal on this subject included in our draft report was deleted from the final report.]

4. On page 26, the claim is made that the impact of demurrage charges is unknown and it is later recommended that this question be researched and resolved. The Commission has found that increased demurrage does reduce the time shippers use to load and unload cars (340 I.C.C. 83, 90 (1971)).

[GAO Comment: Our report does recognize ICC's 1971 action concerning demurrage and the data developed to support their proceeding. (See pages 24 and 25.) However, we still believe the demurrage question has not been resolved as discussed on page 26 and that our recommendations are appropriate.]

5. The report should take note of the Commission's car service decision of June 9, 1980, instituting Ex Parte No. 334 (Sub-No. 4), Order to Show Cause for Granting Railroads Flexibility in Setting Per Diem Levels. There the Commission is seeking comments on whether flexible per diem rates would prove beneficial to the railroad industry during the current economic slowdown. The concept of flexible per diem has broader implications which deserve further discussion in a report of this nature.

[GAO Comment: We discuss flexible car-hire rates and incentive per diem on pages 22, 23, and 32.]

6. The report recommends pricing freedom as an economic solution. In this regard, the Commission on February 19, 1980, instituted Ex Parte No. 324 (Sub-No. 1), Standards and Expeditious Procedures for Establishing Railroad Rates Based on Seasonal, Regional, or Peak-Period Demand for Rail Service. At issue is the Commission's proposal to permit carriers to implement surcharges and/or discounts of up to 15 percent of the base rate on short notice and to permit the filing of flexible tariffs with upper and lower limits.

[GAO Comment: We were aware of ICC's proposal. However subsequent to receiving ICC's comments, an ICC official told us that the proposal was being terminated because section 209 of the Staggers Rail Act of 1980 abolishes ICC's authority to set standards and procedures for demand sensitive rates.]

In sum, the report is a valuable contribution to the important issue of car utilization. Our comments seek merely to update the report to reflect recent Commission activities in this area and to focus the report more sharply on pricing, rather than only technological, responses to the problem.

We would be pleased to discuss these comments with you and to provide any additional information that might be helpful. Again, we are grateful for the opportunity to review the report and for the benefit of your thoughts and analysis.

Sincerely yours,

Alexander Lyall Morton
Director

GAO note: Page references have been changed to correspond to the final report.

APPENDIX IV

U.S. Department of Transportation
Office of the Secretary of Transportation

Assistant Secretary for Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

July 24, 1980

Mr. Henry Eschwege
Director, Community and Economic
Development Divison
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

We have enclosed two copies of the Department of Transportation's reply to the General Accounting Office (GAO) report, "There Is No Shortage Of Freight Cars--Railroads Must Make Better Use Of What They Have," dated June 23, 1980. The Department generally agrees with the findings, conclusions and recommendations. We believe the report is an in-depth and accurate study of the extremely complex field of rail car service and distribution.

Sincerely,

Edward W. Scott, Jr.

Enclosures

DEPARTMENT OF TRANSPORTATION REPLY

TO

GAO DRAFT OF A PROPOSED REPORT

THERE IS NO SHORTAGE OF FREIGHT CARS -

RAILROADS MUST MAKE BETTER USE OF WHAT THEY HAVE

SUMMARY OF GAO FINDINGS AND RECOMMENDATIONS

Railroads cannot satisfy the demand for freight cars because they do not use the existing car fleet efficiently. Cars are not in the right place when needed, rather than there are not enough cars. Federally financed research does point the way to improve car utilization techniques, but only railroad managers can make the operating improvements which will largely eliminate "the freight car shortage." To supplement improved utilization, an economic incentive is needed to deter the railroads' peak demand. Freedom to set rates could smooth out demand, but requires Congressional action to deregulate the industry.

POSITION STATEMENT

The Department generally agrees with the findings, conclusions and recommendations. We believe the report is an in-depth and accurate study of the extremely complex field of rail car service and distribution. The Department notes that with the railroad industry's installation and use of the nationwide management information system recommended in the report, service reliability to shippers will significantly improve, thus making the railroads more competitive with other transportation modes. Moreover, reductions in empty miles and time spent in yards and terminals resulting from the recommended program should significantly reduce the use of petroleum-derived fuel.

The Department supports the recommendation that Congress assist the railroad industry by providing funding for an integrated nationwide car management system.

> [GAO Comment: Subsequent to receiving DOT's comments, the Staggers Rail Act of 1980 was signed. The act authorizes that Federal funds available to assist the railroads can be used for computerized car management systems. Therefore, we eliminated our draft report proposal that the Congress assist the rail industry. However, we also point out that the financial assistance available is somewhat restricted and may not provide much of a financial incentive for the railroads.]

We agree with the report's conclusions that only railroad managers can make the operating improvement that will largely eliminate the freight car shortage, but would add that this is so because only they can make changes in internal structure and organization, provide employee training and establish proper incentives.

APPENDIX V

ASSOCIATION OF
AMERICAN RAILROADS
AMERICAN RAILROADS BUILDING · WASHINGTON, D. C. 20036

WILLIAM H. DEMPSEY
President and Chief Executive Officer

July 22, 1980

Mr. Henry Eschwege
Director
Community and Economic Development Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

Thank you for giving the AAR an opportunity to comment on your draft report "There is No Shortage of Freight Cars - Railroads Must Make Better Use of What They Have."

The General Accounting Office has gone beyond the superficial aspects of this issue to address the key question of unnecessary government economic regulation as it relates to car service.

Attached is a discussion of points we feel are particularly important. This letter refers only to the contents of the report which we received, and not to the conclusions and recommendations.

Sincerely,

W. H. Dempsey

Attachment

ASSOCIATION OF AMERICAN RAILROADS COMMENTS ON DRAFT

GOVERNMENT ACCOUNTING OFFICE REPORT

"THERE IS NO SHORTAGE OF FREIGHT CARS - RAILROADS MUST MAKE BETTER USE OF WHAT THEY HAVE"

Page i [See GAO note] "... that would improve car utilization and by permitting greater pricing freedom to smooth out the demand for freight cars."

This is a very important point with which we agree strongly.

Page i "There are no controls over the system for reporting unfilled orders and shippers frequently inflate car orders as a hedge to assure receipt of some cars during periods of short supply."

A more correct statement would be the following: "In spite of the existence of clear instructions from the AAR, the system for reporting unfilled orders cannot adjust for the fact that shippers frequently inflate car orders as a hedge to assure receipt of some cars during periods of short supply."

[GAO Comment: We are aware that AAR has developed and issued instructions for reporting unfilled car orders. However, neither AAR nor any Federal agency has ever formally tried to determine how closely the railroads follow these instructions. Moreover, AAR does not have the enforcement authority to require railroads to adhere to the instructions.]

Page ii "The railroads could improve utilization and balance distribution through a computerized national system of car management."

We are not sure what you are referring to here. We do not agree with your emphasis on computerization. We would prefer the following wording: "The railroads could improve utilization and balance distribution through a nationwide system of car management."

[GAO Comment: We believe that the crux of the technological solution to the freight car problem is a uniform compatible car management system for what, in effect, is a national car fleet. Rapid direct communication is needed and it is generally accepted that it would be computerized. Our intent is that it be nationwide in scope. The Train II system is an example.]

APPENDIX V

Page iii "Maintaining enough cars to serve any possible demand would be economically inefficient."

We agree.

Glossary Your definition of "Clearinghouse" would be more complete if you added this underlined phrase: "This is to reduce the number of empty car miles and car days resulting from observance of car service rules 1 and 2."

[GAO Comment: We agree that the Clearinghouse concept will also reduce car days and have incorporated this change in the glossary.]

Glossary Your definition of "RAILBOX" would be more complete if you added the following: "There are currently 254 participants."

[GAO Comment: A discussion with RAILBOX parent company officials indicated the suggested change would require a detailed explanation for the reader. Therefore, we did not change our final report.]

Glossary "Revenue ton-mile" is the movement of one ton of revenue freight a distance of one mile.

[GAO Comment: The recommended wording change is correct and we have incorporated it in the glossary.]

Page 1 "Each year, piles of grain are dumped on the ground because elevators are full and there are no rail cars to empty them."

The reference to "dumping" requires a more complete explanation. We feel this sentence is better: "Frequently, piles of grain are dumped on the ground because elevators are full. This can be caused either by existing market rates which are not high enough to induce sale of grain by the owner or by insufficient rail cars to move the grain."

[GAO Comment: Market rates for grain affect stockpiling. Therefore, we have incorporated a comment to this affect on page 1.]

Page 7-8 Your quantification of the "shortage" situation is excellent. It reflects much of what the AAR has been trying to tell the ICC for a long time. We particularly agree with the following statement: "In addition, to meet 100 percent of peak demand would not be feasible because it would result in too many idle cars when demand falls." In June 1980, for example, the reported Class One railroad car surplus was in excess of 110,000.

Page 15 "We reviewed a limited number of service orders (13) issued between September 1972 and October 1979 and found that supporting data was not available to justify the orders; data submitted by interested parties requesting an order was not verified; and there was no evidence that ICC staff verified the justifications for a request for an exemption."

We agree.

Page 16 "Thus while service orders are supposed to be temporary measures to handle emergencies, we found orders in effect for up to two years with no justification in file for the numerous extensions of the orders. Nine of the orders we reviewed were extended at least once."

We agree.

Page 17 "ICC's Chairman has stated that service orders sometimes result in less efficient car utilization in the interest of equity."

We agree.

Page 21 "The first group of cars was put into operation in 1974 and has been increased to 16,000 cars in 1979, about 6 percent of the national general purpose boxcar fleet."

The current figures here would be 23,200 cars, which are about 8.5 percent of the national general purpose boxcar fleet.

[GAO Comment: Since the data we used in our draft report was slightly outdated, we have incorporated the current data on page 21.]

Pages 21 You discuss two efforts undertaken by the railroad industry on its own initiative to improve car utilization and car supply -- RAILBOX and Clearinghouse. There are two other projects which we think the Congress should be aware of, and we suggest you insert the following between paragraphs 2 and 3 on page 19:

RAILGON was formed in 1979 as a subsidiary of Trailer Train Company. It is a nationwide pool of 52'6" plain gondolas with high sides. Management, operation, and participation will be similar to that of RAILBOX. The initial fleet size will be 4,000 cars, to be delivered between July 1980 and fall 1981.

APPENDIX V

Trailer Train is a 25-year old pool of cars designed to carry containers and trailers. Its fleet of over 48,000 cars is approximately 86% of the nation's total of these car types. These cars move irrespective of ownership mark. They average over 170 miles/day. The standardized mechanical design and strong preventive maintenance program are reflected in the average of 95-96% cars in service.

[GAO Comment: The suggested additions on RAILGON and Trailer Train are informative and have been incorporated on page 21.]

Page 28

"The rail industry and ICC, however, have never developed an acceptable level of bad-order cars, although ICC sometimes uses 5 percent as an informal standard in actions concerning these cars."

The decision to repair a car in heavy bad order status is a very complex economic one. Any "standards" the government considers should be developed only after very careful economic analysis. They would have to vary widely with railroad, car type, current economic activity, and forecasted economic activity. The railroad industry experience of many years under the ICC convinces us that regardless of how that agency is structured, it has never been qualified to develop or issue such standards.

An example of just one complicating factor may help to illustrate this. Many older cars beyond the point of economic repair are not scrapped because of conditions in the lease which prevent this. The lease must be allowed to run its full term before the railroad or lessor is in a position to scrap the car. In the meantime, the car is in a "bad order" status.

[GAO Comment: We are not recommending that a standard for bad-order cars be developed. Our reference to the lack of a standard is merely a statement of fact. We discuss this on page 28.]

Page 34

"Maintaining enough cars to serve any possible demand would be economically inefficient. An economic incentive could be used to defer or transfer the railroads' peak demand to supplement improved utilization. A means of accomplishing this objective would be to permit railroads to adjust freight rates based on demand, forcing shippers to consider the economic impact of transportation charges and possibly defer the demand to nonpeak periods."

We agree.

Page 37 "However, Federal efforts at national distribution have contributed to the inefficient use of cars and there is practically no control over distribution at the local level."

We are not sure what you mean by the reference to lack of control at the local level. Our feeling is that the railroads do control distribution at this level, and that the Federal government should not be involved in this matter.

[GAO Comment: We discuss our position on local control of car distribution on page 37.]

Page 40 "Substantial efforts are devoted to seeing that the empty car gets to the shipper to whom it has been assigned but less special effort seems to be devoted to moving loaded cars."

We agree with the first part of this statement, but not with the second part. A constant and even greater effort is devoted to the movement of loaded cars. For example, waybill data is being improved and computerized; the advance waybill data exchange program is expanding; and loaded cars normally move ahead of empties on trains with length or tonnage limits.

[GAO Comment: The lack of effort to move loaded cars is substantiated by customer complaints of irregular service as discussed in chapter 4. Moreover, the fact that railroad performance has deteriorated over the years is demonstrated by the increase in the car cycle. We mention on page 44 that the recent innovation of electronically communicating waybill data between railroads is a step toward improving car utilization.]

Page 41 Your description of the TRAIN II system implies that it could by itself control car movements. No data system based on empirical information can tell one what ought to be. Such a system can be used in conjunction with information and criteria from outside the system, however, to make rational inter-railroad car allocation decisions.

[GAO Comment: We are discussing the limitations of Train II as compared to the proposed car management system being studied under the FRA grant mentioned on page 42. However, on page 41 we also are recognizing Train II as a step in the right direction.]

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Page 43 Your description of the car scheduling concept is good. We are troubled, however, by your mention of "...standards (which) would be useful for Federal Government to monitor information in the car cycle and shipper service."

Because such a system would contain confidential managerial information, it would have to be handled in a confidential manner. If it were not, the quality and completeness of data supplied by the railroads would deteriorate rapidly.

[GAO Comment: We have deleted the reference to standards for Federal monitoring of the car cycle and shipper service in a computerized car scheduling system. We did not make such a recommendation for the reasons stated here. Moreover, in a separate discussion, FRA officials addressed the railroads' reluctance to adopt a management information system monitored by the Federal Government.]

GAO note: Page references have been changed to correspond to the final report.

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF TRANSPORTATION
WASHINGTON, D.C. 20250

July 21, 1980

To: Henry Eschwege, Director
Community and Economic Development Division
United States General Accounting Office

Through: P. R. "Bobby" Smith
Assistant Secretary

From: Ron Schrader, Director
Office of Transportation

Subject: Clearance of OT Comments Regarding "There is No Shortage of Freight Cars--Railroads Must Make Better Use of What They Have."

Attached are our comments regarding "There is No Shortage of Freight Cars--Railroads Must Make Better Use of What They Have."

Attachment

GAO Note: Page references have been changed to correspond to the final report.

APPENDIX VI

Comments of the Office of Transportation, U.S. Department of Agriculture on a draft of GAO proposed report "There is no Shortage of Freight Cars--Railroads Must Make Better Use of What They Have"

General Comments

The report suffers four defects: (1) poor problem identification, (2) understatement of the seriousness to grain shippers through biased data, (3) trivial recommendation of improved utilization of equipment (without a hint of cost/benefit or cost effectiveness considerations), and (4) failure to justify the policy recommendations in terms of solving the problem.

The report is superficial and contradictory. It begins with an attempt to convince the reader that the problem is at best insignificant--"unfilled orders never exceeded 4 percent of the serviceable fleet"--and concludes with a series of recommendations to the chairman of the ICC to "prescribe standards, "complete investigations," "study penalties" and "work with the rail industry" (even though "the Interstate Commerce Commission does not have adequate data on which to base or evaluate the results of its actions...") and to the Congress to authorize necessary funding. We believe it is inadvisable to even suggest to the grain industry--and Mr. Glickman from Kansas--that the freight car shortage is an "illusion." From the perspective of the individual Kansas grain shipper when he orders 20 cars and gets only 5, he considers himself "shorted" 15 cars. He cares little as to the cause, whether it be not enough grain cars, poor car utilization, or inequitable car allocation. While at the micro level, its termed a shortage and at the macro level, poor utilization, the fact remains that there is most deinitely a problem--for both shipper and railroad.

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[GAO Comment: USDA expressed serious concern with our report's thrust. However, we believe that the report is an accurate study of a complex issue that needs to be reported to the Congress. The positive comments received from the other organizations which responded to our draft report appear to support this belief, and Congressman Glickman was appraised of our work's results before the draft report was submitted for comment.

We note also that the Department's comments are concerned exclusively with the grain industry's problems while we are concerned with national rail transportation. The purpose of this report is to point out that there is no actual shortage of freight cars. Rather shippers suffer from an inability to obtain the exact amount of cars ordered at the time desired. This is largely due to inefficient use of the existing fleet. We recognize (see pp. 9 and 10) that periodically the problem is significant in the grain industry. Yet, the railroads are buying covered hopper cars as fast as possible and more grain was moved in 1978 than in the previous year (see p. 10). In our opinion, we have not identified the problem poorly and have not understated the grain shipper's periodic problem. Further, our solution of improved utilization is not trivial because USDA points out in its comments that simply adding more cars to an already crowded system would be counterproductive. Therefore, the answer must be improved utilization. USDA's comments provide data demonstrating that poor utilization exists.

Moreover, the recommendations to ICC will not, as USDA points out, solve the problem. They will, however, resolve certain controversies such as whether a demurrage increase actually results in better freight car utilization and may eliminate any inefficiency resulting from the improper issuance of ICC service orders. To minimize rail customer problems in the long run, the existing fleet's utilization must be improved. This can be done through a computerized, nationwide management information system. Pricing freedom may also help.

Our response to USDA's specific concerns are discussed in further detail in the following sections or in our evaluation of agency comments at the end of chapters 2, 3, and 4.]

The Extent of the Problem

The author(s) were obviously convinced early-on that AAR shortage data were unreliable because "shippers frequently inflate car orders." Little attention is given to the fact that these data, because of the lack of control and verification, can just as easily be deflated by the railroads supplying the information. Indeed, its quite likely that the railroads are even more convinced than GAO that shippers inflate orders and therefore report "corrected" data. A consideration totally ignored is the situation where shippers, because of severe and continuing shortages, simply give-up ordering railroad cars and have, perhaps permanently, shifted to another mode; the figures do not reflect this latent demand. Besides, admitting to the need for shippers to inflate car orders in itself lends credence to the existence of a shortage.

[GAO Comment: We are aware of an ICC study which disclosed that some railroads "adjust" unfilled car order data. However, the extent of this, as well as the exact extent shippers inflate car orders, has never been determined. We do, however, on page 7 allude to this problem by stating that "* * * AAR has no authority to force railroads to report accurately, there is no assurance that all railroads compile the data the same way, and its accuracy has never been verified by audit." The reported data is questionable and the consensus is that shippers overstate their needs.

During our review, we also became aware of the fact that car shortage figures do not reflect the lost orders of shippers who have changed to other transportation modes. However, we were unable to locate an estimate of the problem's extent and therefore it is not discussed in our report. To minimize the shipper's inability to obtain freight cars when needed, the existing fleet must be used more efficiently to make more cars available.]

APPENDIX VI

Concluding that the freight car shortage is insignificant because it represents a small proportion of the total fleet (never exceeding 4 percent) is, at best, misleading. Approximately one-half of all car shortages in 1978 were jumbo covered hopper cars (please note that there are large capacity covered hoppers used in transporting 85-90 percent of all grain traffic and small capacity covered hoppers used for such commodities as cement) while this type of equipment comprised less than 7 percent of the serviceable fleet.

This realization results in a more accurate picture and a different conclusion:

		Jumbo Covered Hopper Fleet*	Reported Jumbo Shortage**	Percent Shortage
1978	1 qtr.	94,600	18,451	19
	2 qtr.	94,700	30,565	32
	3 qtr.	97,200	11,223	12
	4 qtr.	98,906	19,014	19

* ownership at beginning of quarter

**average shortage for quarter

One final observation on this point. If the freight car shortage is not "real" but "illusory" why then have shippers found it necessary to expand their private jumbo covered hopper fleet by 64 percent in the last 2-1/2 years? This private fleet now represents 44 percent of all jumbo covered hoppers compared to 36 percent in 1978. And, but for the very largest shippers, owning rail equipment is generally considered to be a money-losing proposition but necessary for survival.

[GAO Comment: ICC and USDA both raised a question concerning our computations. We discuss these concerns on pages 12 and 13. The report on page 7 states that for 1973-1978, unfilled freight car orders stayed below 4 percent for all principal car types, except covered hopper cars. Further on page 10 we state that the covered hopper car is used extensively in the grain trade, so shortages of this car are a serious problem for grain shippers. We believe we are not minimizing the problem of grain shippers even though the objective of this report is to look at unfilled freight car orders on a national basis rather than limiting it to any one commodity. We also state on page 10 that the railroads moved more grain in 1978 than they did in the previous year and that railroads are adding to their fleet of grain-carrying cars as fast as possible. USDA's data shows that the number of jumbo covered hopper cars increased by 4,300 to 98,900 in 1978 alone.

USDA's data is also slightly contradictory because the reported shortages of jumbo covered hoppers is based on data which it has already criticized for being of questionable accuracy. USDA acknowledges in its comments that shippers inflate car orders.]

The Question of Utilization

The consideration that "railroads must make better use of what they have" is simplistic and hardly a revelation relative to the solution of the problem. Improved productivity through gains in efficiency is obviously preferred over new investment in equipment. The Rural Transportation Advisory Task Force was forceful on this point--pushing more cars into an already congested, inefficient system is not the answer.[1/] Shippers would also prefer the long-run, least-cost solution of improved utilization of

1/ "Agricultural Transportation Services: Needs, Problems, Opportunities," The Final Report of the Rural Transportation Advisory Task Force, January 1980, USDA

of existing resources. Unfortunately even with the phenomenal progress in space-age communications the last several years, utilization of covered hopper cars declined from 17.6 trips per year in 1972 to 15.2 trips per year in 1977 (as of June 1980 this figure stands at 13.5). Had the railroads simply maintained their 1972 car productivity level they would have loaded out an additional 230,000 carloads of grain in 1978 and lessened considerably car shortages.

A USDA study found that "if railroads improve performance to 20 trips per year, some 5,000 fewer hopper cars will be required by 1985 than during the 1977/78 marketing year. At this performance level only about 8,000 additionalcars will be required by 1990, and about 16,000 by the year 2000. However, should present levels of covered hopper car use continue (about 15 trips per year), some 17,000 additional cars will be required to move the expected 12 million ton increase in railroads' share of the 1985 grain movement. About 34,000 additional cars will be required by 1990 to meet the increased transportation demand for grains and 58,000 by the year 2000." 2/

Agriculture, perhaps more than any other single industry, it not only critically interested but highly dependent upon improved future railroad operations.

There is no question as to the need and desirability to improve rail operations. This will, however, likely require extensive public financial involvement and coordination. Railroading is first a competitive industry with each corporation pursuing individualistic goals and objectives and with highly variable financial capabilities. The implication should not be made that methods to improve car utilization is a near-term solution to the car shortage problem given the kind and degree of current commitment.

2/ "Future Railcar Needs for U.S. Grain Movements," USDA/AMS, November 1978.

[GAO Comment: While USDA characterizes our proposed solution as simplistic, it does not appear that we are in significant disagreement. They point out that there has been a significant decline in rail productivity, the decline in the number of trips per year for covered hopper cars. This decline also exists for virtually all rail transportation not just covered hoppers. (The converse in the decline in number of trips is the increase in the car cycle discussed on pages 10 and 11.)

USDA also points our that adding more cars to a congested system is not the answer and goes on to state that there is no doubt rail operations must be improved. USDA's study showed that if railroads improved performance they could significantly reduce the need for additional grain-carrying cars to meet the expected increase in demand by the year 2000.

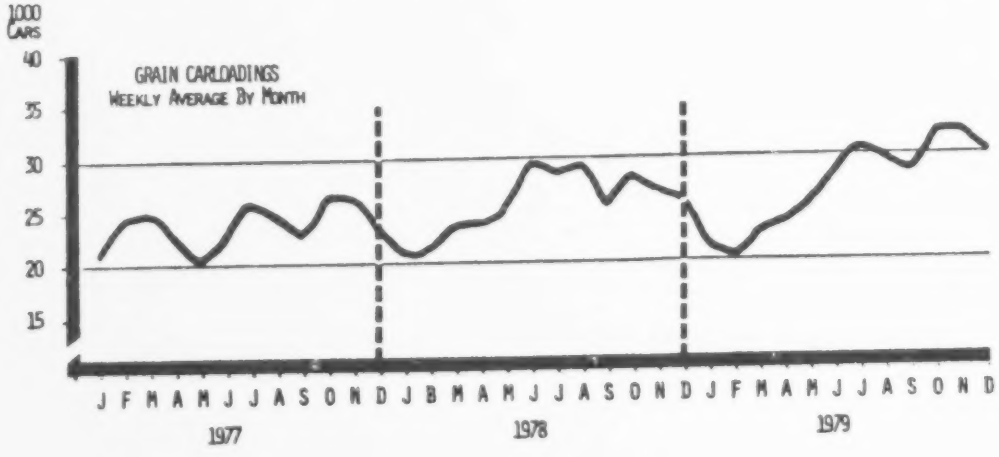
USDA also suggests a need for public involvement. We are in complete agreement and believe our report is directed to this point. However, USDA's comments discuss very briefly actions which may improve rail operations but do not address what we believe is the key to minimizing unfilled freight car orders--a nationwide car management system. Greater pricing freedom may also help. Moreover, we believe that the report's tenor indicates that these will not be short-term solutions but will require time for development and implementation.]

"Peak-Demand" Rates

Pricing flexibility is a theoretically attractive solution to the freight car shortage: at some price level demand will adjust to supply. Under this theoretical framework there would be no shortage even if only one freight car existed; it would be allocated in a "Dutch auction" fashion. While this is an obvious extreme, the railroads can be expected to adjust and eventually fix the supply of equipment to maximize profits. The question that must be addressed, however, is where in-lies the overall public interest? Perhaps the "public good" requires a degree of excess capacity in its railroad system.

[GAO Comment: We point out on pages 8 and 34 that maintaining enough cars to meet 100 percent of demand is economically inefficient because it would result in excess cars during periods of low demand. In 1975 and 1976 from 30,000 to 70,000 cars were standing idle. The AAR has also told us in its comments that as of June 1980 Class I railroads had a surplus in excess of 110,000 cars.]

The report implies that "peak-demand" rates will even out the demand for rail services by grain shippers. First of all, its highly debatable whether grain even "peaks" (see chart 1).


1000 CARS
40
35
30
25
20
15
GRAIN CARLOADINGS
WEEKLY AVERAGE BY MONTH
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1977
1978
1979

Secondly, a recent study by North Dakota State University performed under a USDA contract concluded:

"The impact of seasonal railroad rates on grain shipments and storage during 1967-74 is reported in this publication. Two levels of seasonal rates were in effect from 1967 through 1974 during the period for which flow data were available. North Dakota is the only grain originating area where seasonal rates have been in effect and where data on seasonal flows of grain are available.

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"Seasonality of grain production and off-farm sales of grain by farmers have resulted in freight car shortages during peak demand periods and under-utilization during off-peak periods since rail service was initiated. Seasonal rail rates that are higher during peak demand periods and lower during nonpeak periods have been suggested as an incentive to even out the flow of grain and, thereby, improve the productivity and profitability of railroads and reduce the seriousness of harvest time freight car shortages.

"Major conclusions were that seasonal rates were not effective in modifying the significant seasonal flows of rail grain shipments. In fact, seasonality of rail grain flows became more amplified during the period. For example, the average monthly index for August increased from 109 in 1967 to 151 in 1979. Even a peak rail rate of 45¢/bu. versus an off-season rate of 15¢/bu. would affect seasonal grain flows only slightly. Truck shipments were also seasonal, but the peaks and valleys were not as high or low as for rail.

"Grain movements via rail are more sensitive to truck costs than to rail rates, while the demand for truck transportation was elastic to both rail rates and truck costs.

"Construction of new on-and off-farm grain storage was unaffected by seasonal rail rates. Other factors seemed to be more important than seasonal rail rates. Farmers would have to receive a seasonal discount of at least 12-1/2¢/bu. to compensate for storage costs if all other factors were constant. Grain marketing personnel were opposed to seasonal rates because of the added complication to their work, they felt that such rates would not work, and there was a year-round freight car shortage anyway. They felt seasonal rates of minor importance among the many factors which

influence the timing of grain sales. Results from this study confirm this attitude."3/

While generally supporting increasing rail pricing flexibility, the Rural Transportation Advisory Task Force also advocated increased shipper/carrier commitment through contracting for service and rates:

> Contracting for rail transportation should provide railroads with an important incentive to expand means for improving car utilization for single-car shipments, and of expanding multiple-car and unit-train opportunities. Once captive shippers have access to rail contracts, railroads will be more inclined to expand these methods as one means to rapidly free-up cars. Because non-captive traffic could be lost to other carriers or modes, railroads would want to make sure cars are available when they are needed.
>
> Availability of rail contracts can also increase the shippers' role in improving car service. With the certainty of service that contracts guarantee, shippers can increase their investments in storage and other facilities. This could help solve the car supply problem. In addition, shippers who market their products in advance of shipment can work with railroads in developing contracts that schedule shipments when demand for cars is less strong, in exchange for lower rates. Rail contracts would almost certainly contain penalties for both railroads and shippers for any failure to provide or use contracted service.
>
> Shippers who are prepared to make advance commitments to railroads, whether they are captive or not, should enjoy guaranteed car service and rates as a result of their contracts. Given that a shipper

3/ "Impacts of Seasonal Rail Rates on Grain Flows and Storage in North Dakota" W. W. Wilson, et al. North Dakota State University, Fargo, North Dakota. (soon to be published.)

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could appeal to the ICC to obtain a contract, contracting benefits would extend to a broad range of shippers. And contracting could provide the railroads with necessary incentives to improve car supply and utilization.

As the task force has stated in its policy, it believes that solutions to transport problems should remain in the private sector to the greatest extent possible. Therefore, the essential question is, "What economic incentives do railroads and shippers have to take advantage of their opportunities to improve car supply and utilization? Are they communicating?"

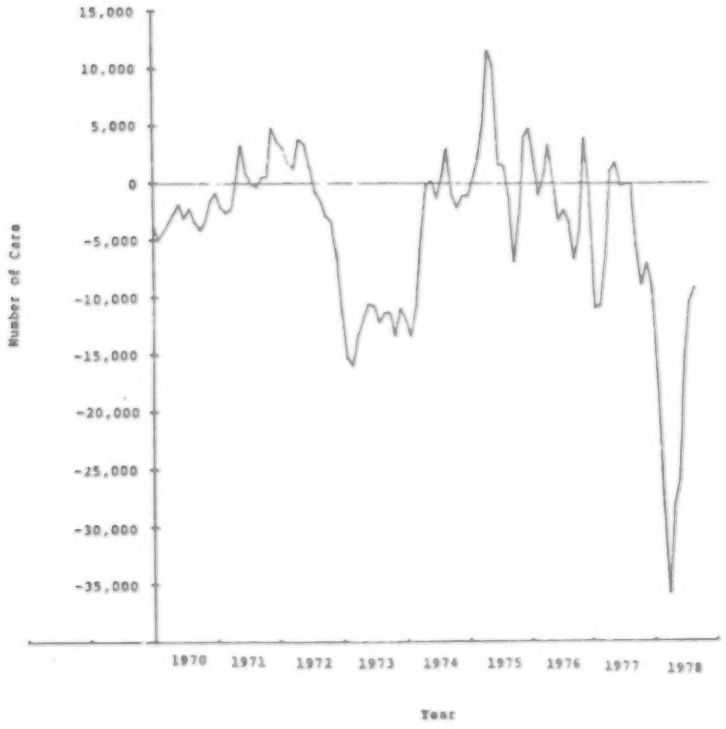
When deciding whether to expand its car fleet, a railroad must consider the fact that the additional equipment may not be fully utilized. This risk increases with each incremental expansion of the car fleet. Consequently, railroads will not expand their fleets unless they can count on improved revenues (e.g., through peak or seasonal pricing) or shipper assumption of part of the risk (e.g., through rail transportation contracts or other means). Peak and seasonal pricing is not totally effective in those cases where commodities are sold well in advance of their shipment, as many agricultural commodities are. Advance contracting for rail transport appears to be the most viable alternative among these possible economic incentives for railroads to buy equipment.

The task force also recognized that improvements in rail rights-of-way (to reduce "slow orders") and labor work rules would increase car utilization efficiency as would the establishment of free-running car fleets.

[GAO Comment: We believe USDA's statistical data on grain carloadings actually shows that peak periods do exist. This data shows a range of average weekly grain carloadings from a low of about 20,000 to about 30,000 cars during 1978 and to a peak exceeding 30,000 cars in 1979. This is a spread of about 10,000 loadings during different periods. Moreover, this data only shows loadings, it does not account for total demand, that is, it excludes the cars requested but not supplied. Another USDA chart shows that peak periods do exist.

GRAPH 1

Average Daily Surplus/Shortage of Covered Hopper Cars Reported Monthly
1970 - 1978



Source: USDA, Agricultural Marketing Service reports of data received from the Association of American Railroads.

The North Dakota State University study is still in draft form. It is limited to one commodity in one State. Our report addresses national rail transportation, and we believe that additional work would be needed to apply the conclusions of the North Dakota study to all rail transportation. Furthermore, an October 1977 ICC study of the impact of the 4R Act rate-making provisions concluded that for wheat a peak period rate increase of between 16 to 35 percent would smooth out demand. This study discloses that railroads believe peak period rates for wheat must be implemented over a large geographic region--not one State.

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The Rural Transportation Advisory Task Force, cochaired by the Secretaries of Agriculture and Transportation, generally supported increasing rail pricing flexibility. Contract rates, supported by USDA, can be looked upon as a form of pricing freedom. How peak demand rates affect the demand for freight cars is open to question. We do not recommend complete pricing freedom because of the complexities of economic reform, but we do believe it is a supplemental solution to improved freight car utilization and should be seriously considered.]

Miscellaneous Comments

In the recommendation GAO would have the ICC study whether higher demurrage charges would bring about faster release of cars. Demurrage charges today are extremely high after the sixth day ($90 per day). No shipper is willing to use a railcar as warehouse space at that cost. It is not unusual for a receiver to release a car the same day as received only to discover the car still on his siding two or three days after release. A management information system, no matter how sophisticated, will not move that car. Only people and locomotives can make that car move.

[GAO Comment: USDA's comment implies that we are recommending higher demurrage rates. Moreover, while they mention the high rates after the 6th day, they do not point out the free time and lower rates for demurrage up to that point as discussed on pages 24 and 25.

We are not recommending higher rates. On the contrary, we are aware of the controversy over whether demurrage improves car utilization or is merely a source of revenue to the railroads. We believe no one knows for sure what the impact of demurrage is, particularly whether the railroads use the cars efficiently after release, and recommend ICC find out. (See pages 30 to 32.)]

The glossary contains one glaring error. In the description of a switching and terminal railroad, one function was the classification of freight by commodity and des ination. Railroads do not classify cars by commodity.

[GAO Comment: The definition appearing in the glossary was taken from a transportation dictionary. Neither ICC, FRA, nor AAR objected to it. The Assistant Manager, FCUP, told us that the report was reviewed by a number of experienced AAR personnel and no one questioned this point. He suggested we make no change.]

In chapter one, page 2, last paragraph, the duties of the ICC are described. The ICC, contrary to popular belief, does not approve railroad rates or those of any other mode it regulates. The only thing the ICC does is accept them for filing. If the rates are challenged by a shipper or a carrier as being in violation of the IC Act, the ICC may investigate the matter. The ICC also does not protect the public from loss and damage. That is a matter between the shipper and carrier regardless of mode.

[GAO Comment: While this point was not raised by ICC, we believe that the introductory section would be more specific if modified in accordance with these suggestions and we have made changes to page 2.]

The report is quite critical of the Interstate Commerce Commission (ICC) in its issuance of car service orders. Specifically, it incorrectly describes these temporary orders as covering, among other things, embargoes. The authors should have known that embargoes are "put up" and "taken down" by the Association of American Railroads (AAR). It is a self-policing matter and has worked well over the years. As to the proliferation of car service orders in the last two years, obviously the authors did not take into consideration the bankruptcy of two midwestern railroads and the need for service orders to implement directed service on the Rock Island. Moreover, if as the report states that the railroads had unfilled car orders totalling 66,000 cars per day, clearly an emergency existed and the ICC took action to meet it.

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I	Letter dated July 11, 1978, from Congressman Dan Glickman, Member, House Committee on Agriculture	50	1/E11
II	Letter dated June 25, 1980, from the Assistant to the Chairman, Interstate Commerce Commission	52	1/E13
III	Letter dated July 21, 1980, from the Director, Office of Policy and Analysis, Interstate Commerce Commission	54	1/F1
IV	Letter dated July 24, 1980, from the Assistant Secretary for Administration, Office of the Secretary of Transportation, Department of Transportation	58	1/F5
V	Letter dated July 22, 1980, from the President and Chief Executive Officer, Association of American Railroads	60	1/F7
VI	Letter dated July 21, 1980, from the Director, Office of Transportation, Department of Agriculture	67	1/F14

[GAO Comment: ICC's designation for types of service orders specifically includes embargoes. As an example, Service Order 1345 specifies certain ICC personnel to act as embargo agents. We also believe that the proliferation of service orders cannot be attributed to the bankruptcy of two midwestern railroads. In 1978 and 1979 there were 110 orders issued of which 22 involved these two railroads. Moreover, we believe there are many situations where service orders are appropriate. However, the orders are to be issued in emergencies which we believe means short lived. The circumstances under which they are issued need to be defined and ICC needs a system to monitor the orders' effects. This is the basis for our recommendation.]

In the area of "technical faults," in chapter 4's discussion of the car cycle, a 16-day period is specified as the average time a car will spend in railroad yards and terminals. On page 36, 16 hours is cited as the average time a car spends in the St. Louis terminal. While the two periods may not be inconsistent, they appear inconsistent. An explanation is needed.

[GAO Comment: We disagree with this point. We specifically state that the 16-day period is the average time cars spend in yards throughout the country, while the 16-hour figure is strictly for one terminal.]

Also in chapter 4, the section concerning car distribution is categorized into three sections; individual railroad car distribution, distribution within the railroads, and distribution to the shipper. The latter two categories are really the same as a railroad distributes cars within its system to the end that the cars will be delivered to shippers (and receivers). While the report finds no problem with distribution within railroads, they cite numerous examples of problems with distribution to the shipper.

[GAO Comment: We want to differentiate between the three levels of car distribution. The second level, the "wholesale" distribution within a railroad, is handled in a fairly sophisticated manner, frequently computerized. However, the third level or "retail" distribution to customers is not sophisticated. It is strictly in the hands of the local agent with a distribution plan "in his head." We do recognize the problems at the local level.]

Lastly, in chapter 3, the report attempts to make a point concerning the ineffectiveness of service orders. A service order is cited that required no less than a specified number of cars be allocated to grain elevators. The railroads delivered 52 percent more cars than required by the order. The GAO report concludes, "if the railroad had complied with the order and limited the cars to the minimum required they could have reduced the number supplied (to) country elevators..." The ICC order was never meant to limit cars supplied, nor was there any reason to suspect the railroads would interpret the order as a limitation.

[GAO Comment: USDA is misinterpreting our example. The railroads had been doing as good a job before the order was issued as was accomplished with the order. However, if the railroads had minimally complied with the order they could have reduced the number of cars allocated to country elevators. We believe ICC is unaware of such circumstances because they lack a means of evaluating the orders and we recommend a system be developed.]

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